

# SPECIFICATIONS & CONTRACT DOCUMENTS

# BS 123 12" Water Main Loop Phase II & III

### SEGUIN CITY COUNCIL

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#### **APPENDIX**

GEOTECHNICAL ENGINEERING STUDY BY FROST GEO SCIENCE, INC. JANUARY 8, 2010

#### **INVITATION FOR BIDS**

Sealed bids addressed to the City Manager of the City of Seguin, Guadalupe County, Texas will be received at the Seguin City Hall, 205 North River, Seguin, Texas, 78155, until 2:30 P.M., September 9, 2014 (CDST) for the SH123 BYPASS WATER LOOP – Phase II – US90A to Countryside and Phase III – Countryside to Meadows at Nolte Farms. The bids will be publicly opened and read aloud at the Seguin City Hall at 3:00 P.M. Bids shall be submitted in a sealed envelope (8 ½" x 11" minimum), clearly marked as follows:

SEALED BID: SH123 BYPASS WATER LOOP Bid Package No. 24-2014-38 To be opened at 3:00 P.M., Tuesday, September 9, 2014

Principle items of construction will include:

Installation of new 12-inch diameter PVC C-900 waterline including fire hydrants, service, and appurtenances. Phase II along Preston Drive, FM466 and Countryside Blvd. and Phase III Countryside Blvd. along Joe Carrillo Street and Barnes Drive to Meadows at Nolte Farms.

Each bid must be accompanied by a certified or cashier's check, or an approved bidders bond in an amount not less than 5% of the maximum total bid, payable to the City of Seguin, Texas without recourse, as a guarantee that the Bidder will enter into a contract and execute performance and payment bonds on the forms provided, within ten (10) working days after the award of contract.

Bidding forms, plans, and specifications may be examined free of charge or obtained at City Hall, 205 N. River, Seguin, Texas in the Public Works office on the second floor upon receipt of payment of fifty dollars (\$50.00) or may be obtained on the City's website at www.seguintexas.gov/bid\_opportunities. Please make checks payable to the City of Seguin. Payment is non-refundable.

A pre-bid conference will be held Tuesday, August 26, 2014 at 2:30 PM in the City Council Chambers located in the Seguin City Hall, 205 North River, Seguin, Texas 78155.

The City of Seguin reserves the right to reject or accept any or all bids or combination of bids and to waive informalities.

**Douglas G. Faseler, City Manager CITY OF SEGUIN, TEXAS** 

#### **SECTION I**

#### **SPECIAL INSTRUCTIONS**

#### 1. SCOPE OF PROJECT

The City of Seguin (herein called the OWNER) invites proposals for a 12" Water Main Loop. Principal items of construction will include:

Installation of new 12-inch diameter PVC C-900 waterline including fire hydrants, services, and appurtenances. Phase II along Preston Drive, FM 466 and Countryside Blvd. and Phase II Countryside Blvd. along Joe Carrillo Street and Barnes Drive to Meadows at Nolte Farms.

#### 2. PROPOSALS AND METHOD OF BIDDING

- 2.1 The proposal consists of various major items of work Bidders will provide prices for each item in the proposal. The prices will be entered in the appropriate spaces in both script and figures. Should the Bidder have costs for any incidental work where a bid item does not occur, the costs of such work will reflected in the unit costs of the bid items in the proposal. No separate payment will be made for any work other than those items occurring in the proposals.
- 2.2 At the time of proposal submittal, bidders will provide a Contractor Work Plan, which details the approach and scope of the work to be performed. The Contractor Work Plan shall include a proposed schedule for completion of all work to be performed.
- 2.3 Bidders are hereby notified of the number of calendar days for completion of the project in Article 58 of this section.
- 2.4 Bidders shall bid on all items of the Bid.

#### 3. OBLIGATION OF BIDDER

At the time of the opening of bids each Bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from any obligation with respect to his bid.

#### 4. RECEIPT AND OPENING OF BIDS

Bids will be received at Seguin City Hall, 205 North River, Seguin, Texas 78155, until 2:30 P.M., September 9, 2014 (CDST). Any bid received after closing time will be returned unopened. The bids will be publicly opened and read aloud at the Seguin City Hall at 3:00 p.m. Bids shall be submitted in a sealed envelope (8 ½" x 11" minimum). Clearly marked as follows:

SEALED BID: SH123 BUYPASS WATER LOOP Bid Package No. 24-2014-38 To be opened at 3:00 P.M., Tuesday, September 9, 2014

#### 5. BID SECURITY

- 5.1 Each bid must be accompanied by cash, certified check of the Bidder or a bid bond, duly executed by the Bidder as principal and having as surety thereto a surety company approved by the Owner, in the amount of 5% of the bid. Such cash, checks or bid bonds will be returned within ninety (90) days after the date of the opening of bids, upon demand of the Bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.
- 5.2 Any cash, check, or bid bond is a guarantee that the Bidder will enter into a Contract and execute performance and payment bonds on the forms provided, within ten (10) days after the award of Contract. Failure to execute these documents within the required time shall be justification for the Owner to consider this a forfeiture of the security by the Bidder to the Owner.

#### 6. QUALIFICATIONS OF BIDDER

- 6.1 The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request.
- 6.2 The Owner may request a list of recent projects of equal difficulty and size that the low bidder has performed. Bidders hereby agree to supply such a list prior to award upon request to the Owner. Quantity or proportionate share of the project to be performed by subcontractors not on the prime contractor's payroll will be considered by the Owner.
- 6.3 The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work therein.

- 6.4 Bidders may be required to submit evidence that they have a practical knowledge of the particular Work bid upon, and that they have the financial resources to complete the proposed Work.
- 6.5 In determining the Bidder's qualifications, the following factors will be considered: work previously completed by the Bidder and whether the Bidder (a) maintains a permanent place of business, (b) has adequate personnel and equipment to do the work properly and expeditiously, (c) has the financial resources to meet all obligations incidental to the Work, and (d) has appropriate technical experience.
- 6.6 Each Bidder's claim history may be reviewed in the evaluation of the bid. The Bidder may be required to show that he has handled former work so that no just claims are pending against such work. No bid will be accepted from a Bidder who is engaged on any work which would impair his ability to perform or finance his Work.

# 7. TIME OF COMPLETION AND LIQUIDATION DAMAGES

Bidder must agree to commence on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the construction of the project within the number of calendar days proposed on the last sheet of the proposal, or pay as liquidated damages the sum for each consecutive calendar day thereafter as hereinafter provided in the General Information.

#### 8. SECURITY FOR FAITHFUL PERFORMANCE

Simultaneously with his delivery of the executed Contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of the Contract and for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions included herein. The Surety on such bond or bonds shall be duly authorized surety company satisfactory to the Owner.

#### 9. POWER OF ATTORNEY

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

#### 10. LAWS AND REGULATIONS

The Bidder's attention is directed to the fact that all applicable State laws, municipal ordinances and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though written out in full.

#### 11. SUBCONTRACTS

- 11.1 The Bidder is specifically advised that any person, firm or other party to whom it is proposed to award a Contract under this Contract must be acceptable to the Owner and Engineer.
- 11.2 The Bidder shall provide a list of all major subcontractors and vendors with his bid. Failure to provide may constitute a rejection of the bid.

#### 12. PAYMENTS

On or before the 25<sup>th</sup> day or each month, the Contractor shall prepare and submit to the Engineer an application for payment showing as completely as practicable the total value of the work done by the Contractor up to and including the last day immediately preceding the date of such application and the value of all sound materials delivered on the site of the work that are to be fabricated into work.

The Owner shall pay the Contractor on or before the 25th day of the month in which the Owner receives the approved application from the Engineer the total amount of the approved and verified application, less ten (10) percent of the amount thereof, which ten (10) percent shall be retained until final payment, and further less all previous payments and all further sums that may be retained by the Owner under the terms of this Agreement. It is understood, however, that in case the whole work be near to completion and some unexpected and unusual delay occurs due to no fault or neglect on the part of the Contractor, the Owner may, upon written recommendation of the Engineer, pay a reasonable and equitable portion of the retainage to the Contractor, or the Contractor, at the Owner's option, may be relieved of the obligation to fully complete the work and, thereupon, the Contractor shall receive payment of the balance due him under the contract subject only to the conditions stated under "Final Payment." Any such payments of retainage by Owner to Contractor prior to final payment must be agreed to in writing by the surety or sureties on Contractor's payment and performance bonds.

The Contractor shall submit to the Engineer, copies of the material invoices with the application for payment. No payment will be made to the Contractor until the quantities or work submitted have been checked and verified by the Engineer.

#### 13. METHOD OF AWARD

- 13.1 An award will be made to only <u>one</u> Contractor. The award may be made for the lowest base bid <u>or</u> the lowest base bid including alternate bid item(s), if applicable.
- 13.2 The Owner reserves the right to waive informalities, to reject any or all bids, and to accept the bid most advantageous to the public interest. The right is also reserved to increase or decrease the total proposal amount by 25%, by increasing or decreasing quantities if the total proposal exceeds or is below the funds available. The right is also reserved to eliminate any item(s) in the proposal if the total proposal exceeds the funds available.

#### 14. ENGINEER

The word "Engineer" as used herein refers to Klotz Associates, 7550 IH-10 West, Northwest Center, Suite 300, San Antonio, TX 78229.

#### 15. TRAFFIC CONTROL

15.1 The Contractor will be responsible for furnishing and using all barricades, warning lights, signs, etc. necessary to protect his work and maintain traffic flow satisfactory to the Owner. Warning devices shall be as required in the Texas Manual on Uniform Traffic Control Devices. All barricades and warning signs shall be well lighted during the hours between sunset and sunrise. All work scheduling shall be coordinated with the City staff, and be approved by the City staff before work can proceed. No separate payment will be made for traffic control.

#### 16. OWNERSHIP OF PROJECT

Until final acceptance of the total project by the Owner and Engineer, the Contractor shall take full responsibility for the welfare of the partially completed work. Damage to the Contractor's work from any cause shall be repaired at the Contractor's expense.

# 17. REPLACEMENT OF MISCELLANEOUS IMPROVEMENTS

The Contractor shall repair or replace <u>all</u> existing utilities, water mains, fences, concrete walls, sidewalks, concrete curbs and concrete pavement, signs, culverts, asphalt pavement, building walls and attachments and other miscellaneous improvements damaged by the Contractor due to his operations on this project, to a condition equal to or better than their condition before construction, at no additional expense to the Owner. No direct payment will be made for this item.

#### 18. MAINTENANCE GUARANTEE

- 18.1 The Contractor shall maintain and guarantee the work, which he does against defective workmanship and materials for a period of one (1) year from the date of final acceptance of the work by the Owner.
- 18.2 Prior to the expiration of the one (1) year warranty period, the City will conduct a thorough inspection of the improvements to verify the integrity of the project. This inspection will include visual examination of the improvements and may include other inspection techniques to verify the integrity of the improvements.
- 18.3 Where defective workmanship and/or materials are discovered, requiring repairs to be made under this guarantee, all such repair work shall be done by the Contractor at his own expense within five (5) days after written notice of such defect has been given to him by the Owner. Should the Contractor fail to repair such defective workmanship and/or materials within five (5) days after being notified, the Owner

may make the necessary repairs and charge the Contractor with the actual cost of all labor and materials required. Such charges shall be from retainage.

18.4 The Contractor shall arrange to have his faithful performance bond run for a period of one (1) year after the date of completion of the construction work to cover his guarantee as set forth above.

#### 19. CLEAN-UP

- 19.1 The Contractor shall at all times keep the jobsite as free from all material, debris, and rubbish as is practicable and shall remove same from any portion of the job site when it becomes objectionable in the opinion of the Engineer or Owner.
- 19.2 After construction work is completed and before final acceptance of improvements by Owner, Contractor shall remove all debris from site of project, including all existing debris to an approved place of disposal. Temporary structures, forms, equipment, objectionable rocks, concrete and other debris shall be remove in such a manner as to leave the site of work in a neat and presentable condition throughout; and restore in an acceptable manner all property damaged in the progress of this work. No direct payment will be made for clean-up. All cleared areas shall be re-vegetated.
- 19.3 Materials cleared from project shall not be deposited on adjacent public or private property without written permissions of the Owner's thereof filed with Owner's Agent; and any materials so deposited shall be leveled and left in a condition satisfactory to the Owner's Agent.

#### 20. EXCAVATION

Excavation in this Contract shall be <u>unclassified</u>. There is no separate pay item under this Contract for excavation and its cost shall be included in such pay items as are provided in the Contract and proposal.

#### 21. AFFIDAVIT OF BILLS PAID

Upon completion of the project and final acceptance by the Owner and Engineer, the Contractor shall be required to furnish the Owner with an Affidavit certifying that all suppliers and subcontractors have been paid, before final payment will be made by Owner.

# 22. ADDENDA AND INTERPRETATIONS

22.1 No interpretation of the meaning of the plans, specifications or other prebid documents will be made to any bidder orally. Every request for such interpretations should be in writing addressed to Willa Hagemann, Assistant Director of Finance, City of Seguin, PO Box 591, Seguin, Texas 78156-591, or by email to

whagemann@seguintexas.gov, and to be given consideration must be received at least seven (7) days prior to the date fixed for the opening of bids.

22.2 Any and all such interpretations and supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed or emailed to all prospective bidders (at the respective addresses furnished for such purposes), not later than five (5) days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

#### 23. EXISTING UTILITIES

- 23.1 Existing surface and subsurface structures (gas mains, water mains, sewer mains, storm sewers, telephone cables, sprinkler systems, etc.) are shown on the plan if their location has been determined, but it shall be the responsibility of the Contractor to avoid damaging these existing structures whether or not they are shown on the plans. The Owner and Engineer assume no responsibility for failure to show any or all of those structures on the plans or to show them in their exact location. It is mutually agreed that such failure to show these structures will not be considered sufficient basis for claims for additional compensation for extra work or for increasing the pay quantities in any manner whatsoever. If any structure is damaged by the Contractor it shall be his responsibility to repair the damage at his own expense and restore the structure to its functional use.
- 23.2 Contractor shall locate and determine (verify if depth is shown on plans) elevation of all existing underground utilities. If a utility is found to be in conflict with proposed grades, the Engineer shall be contacted and grades adjusted to avoid conflict. No separate pay.

#### 24. RECORD DRAWINGS

The Contractor will be furnished one set of plans on which he shall indicate changes made during construction. All notes and comments necessary to give a clear conception of exactly how all items were constructed including location shall be shown. This set of plans shall be reviewed with the Engineer/Owner at the completion of the project and returned to the Owner at that time.

#### 25. PRECONSTRUCTION CONFERENCE

After award and execution of a contract between the Owner and Contractor, a formal preconstruction conference will be held in City Hall prior to commencement of the work. This conference will include review of technical specifications in order to insure clarity as to the type of construction machinery to be used, construction methods to be used, and materials to be used, obligations of both the Contractor and the City forces, personnel, safety, issues/requirements, meetings, control of the project, guaranty/warranty, and the method of inspection and decision-making to be used during this project.

#### 26. ORDER OF CONSTRUCTION/WORKING HOURS

- 26.1 The Contractor shall submit to the Engineer prior to the pre-construction conference a construction schedule, which shall meet the Engineer's approval before construction can begin.
- 26.2 Generally, the Contractor shall perform all construction activities between 8:00a.m. To 5:00p.m., Monday through Friday only. However, the Contractor may be allowed to work weekends and holidays upon the Engineer's written approval. Contractor shall be responsible for paying all costs, fees, etc. related to Owner representatives during hours on weekends, holidays, and outside 8:00 a.m. to 5:00 p.m.
- 26.3 The Contractor shall keep the Owner and the Owner's Engineer informed as to his construction progress. Because of traffic congestion, the contractor may be required to schedule construction in some areas between the hours of 7:00 p.m. and 7:00 a.m. if the City staff or Engineer determines it to be necessary. Contractor will be required to perform work in a fashion that will cause the least amount of inconvenience to the general public.
- 26.4 The Contractor will be required to totally complete portions of the project prior to proceeding with other portions. The Contractor shall submit to the Engineer prior to the preconstruction conference a construction schedule which shall meet the Engineer's approval before construction can begin. All work scheduling shall be coordinated with City staff and approved by City staff before work can proceed. The Contractor will be required to have someone on call 24 hours per day during the course of the project.

#### 27. LABOR FORCE

- 27.1 The Contractor may bring his superintendent, foreman, sub-foreman, machine operators, and sufficient key men to round his organization. All other skilled and unskilled labor used on the work when qualified, fit, and available, shall be obtained first from residents within the city where this project is located.
- 27.2 The Contractor shall abide by the Wage and Hour Laws of the State and must not pay less than the rates legally prescribed.
- 27.3 The Contractor shall maintain his superintendent or foreman onsite for the duration of the project. Subcontractor employees shall not be considered the superintendent or foreman on site.

# 28. CONTRACTOR'S RESPONSIBILITY AND LIABILITY FOR PERFORMANCE OF WORK

- 28.1 Is expressly understood and agreed to be the Contractor that, regardless of the extent of inspection and supervision provided by the Owner and the Engineer, it is the Contractor's responsibility to perform and complete work in accordance with the drawings and specifications, and that the Owner and Engineer have no liability or responsibility whatever to the Contractor for any work performed by the Contractor which is not in accordance with the drawings and specifications regardless of the time when discovered and whether discovered at any time during the course of construction or after acceptance of the work.
- 28.2 The Owner shall inform the Contractor of any work that is not in accordance with the drawings and specifications when it becomes known to him. If any work is performed which is not in accordance with drawings and specifications and is not discovered until a later time, neither the Owner nor the Engineer shall have any responsibility to the Contractor, or be liable to the Contractor for the correction or removal of unsatisfactory work or of any work subsequently performed or affected by it.
- 28.3 The correction or removal of such unsatisfactory work and the replacement with satisfactory work shall be performed by the Contractor at his own expense, and is understood to be fully included in his contract requirements, without any additional compensation or claims upon the Owner or Engineer.

#### 29. NOTIFICATION OF CONSTRUCTION PROGRESS

- 29.1 Contractor shall keep the Owner informed at all times with respect to the progress of the Services and the results obtained there from. Without limitation of the generality of the immediately preceding sentence, Contractor shall furnish verbal reports to Engineer as requested but no less than on a weekly basis specifying the days spent and Work accomplished by Contractor since the preceding report; and promptly notify Engineer in writing of all accidents, claims (including, without limitation, asserted liens, and other encumbrances), and losses arising out of or in connection with the Services.
- 29.2 The Contractor shall give the Owner 48 hours' notice for inspection of any subsurface activity.
- 29.3 If work is delayed or behind schedule, the Contractor shall submit additional progress reports at such intervals as Owner may request. Each progress report shall include sufficient description of current and anticipated delaying factors, their effect on the construction schedule, and proposed actions that the Contractor will take to complete the project within the time allotted. If considered necessary, the Owner will schedule additional meetings to discuss progress with the Contractor.

#### 30. CHANGE OF LOCATION/ALIGNMENT

No change in the alignment is contemplated; however, should a change be necessary, the Owner reserves the right to make such changes; unless it can be clearly shown that such changes would result in an undue hardship on the Contractor, no extra compensation will be allowed the Contractor.

#### 31. SEARCHING FOR EXISTING UTILITIES

Existing utilities (water, sewer, gas, electric, cable, communication, pipelines, etc.) may be difficult to locate. The approximate location of these facilities has been shown on the plans, but do not reflect exact locations. The Contractor will be required to excavate and locate these facilities, and to conduct such investigations as necessary to perform the work contemplated on the plans. The Owner will provide liaison with property owners and the limited information it has concerning existing locations, sizes, materials, etc., but any delays or investigations required of the Contractor shall be deemed incidental to the project. No separate payment will be made. No machine time or additional labor will be provided by the Owner in this regard.

#### 32. SALVAGE RIGHTS

- 32.1 All materials and appurtenances (including fire hydrants) of any kind, etc., excavated, removed, or produced during the project by the Contractor shall be delivered to the Owner's yard, if desired by Owner. No separate payment will be made.
- 32.2 If the Owner desires not to keep these materials, they shall be disposed of properly and according to current laws. No separate payment will be made.
- 32.3 The City of Seguin does not have an active landfill.

# 33. DISPOSAL OF EXCAVATED MATERIALS

All excavated materials not used in backfilling will be disposed of by the Contractor at a site obtained by the Contractor and approved by the Owner. Disposal of excavated materials shall be in accordance with all rules and regulations of the Texas Commission on Environmental Quality (TCEQ). Any pieces of material such as broken concrete, asphalt, or pipe measuring twelve inches (12") or larger in any dimension, shall be disposed of by the Contractor at an approved landfill or as directed by the Owner. Spoil areas shall be leveled with a motor grader for future mowing. The Contractor shall include in his bid the cost to dispose of the materials.

#### 34. SUBMITTAL DATA

The Contractor shall furnish submittals for any such parts of the work and equipment as set forth in the specifications and indicated on the plans. The procedures for review of the submittals shall be as follows:

- 34.1 The Contractor shall submit to the Engineer for his review, four (4) prints of drawings, plus whatever number of prints the Contractor desires to be returned to him. The submittal prints shall be accompanied by a letter of transmittal, which shall be of the form supplied by or approved by the Engineer.
- 34.2 When a drawing is satisfactory to the Engineer, the number of prints the Contractor desires returned to him will be stamped or marked, "Approved as Corrected" or "Approved as Submitted", will be dated and will be returned to the Contractor by letter.
- 34.3 Should a drawing be unsatisfactory to the Engineer, he will stamp thereon "Revise and Resubmit" or "Rejected", and will return one (1) or more copies thereof to the Contractor with the necessary corrections and changes indicated. The Contractor must make such corrections and changes, and again submit at least four (4) prints of the drawings for approval. The Contractor shall revise and resubmit the working drawings, as required by the Engineer, until satisfactory review thereof is obtained.
- 34.4 The Contractor shall allow sufficient time for preliminary review, correction and re-submission, and final review of all working (shop) drawings. The Contractor should allow not less than fourteen (14) days for each review. Drawings of items critical to job progress, when requested in writing by the Contractor, will be given priority review.

#### 35. SANITARY FACILITIES

The Contractor shall provide chemical toilet facilities for the use of his forces. Adequacy of these facilities will be subject to the approval of the Owner and maintenance of same must be satisfactory to the Owner at all times. Contractor shall provide a maintenance schedule to the Owner for approval.

#### 36. WITHDRAWAL OF BIDS

Contractors may withdraw their bid at any time until the specified closing time for acceptance of bids. After the specified time, no bid may be withdrawn for a period of ninety (90) days or until a contract is awarded, whichever occurs first.

#### 37. SUB-SURFACE CONDITIONS

It shall be the responsibility of the Contractor to satisfy himself as to the soil conditions and nature and type of geological formations in and through which this project will be constructed, and to make appropriate allowances in the proposal he submits for doing the

work. Such information as may be obtained from the test borings and accompanying notations shown on the plans is merely for the guidance of the Contractor and is not to be construed in any manner as a guarantee by the Owner that such conditions of sub-surface strata are infallible.

#### 38. STAKING FOR CONSTRUCTION

The Contractor will provide all construction staking services for the project. Staking shall be provided at such intervals as necessary to control the grade and alignment of the work. The hubs will be set at whatever offsets the Contractor requests. The cost of these services will be reflected in the unit price amount bid in the proposal. No separate payment will be made.

#### 39. BID PROPOSALS

- 39.1 Bidders are requested to submit bids on all bid items as listed in the proposal, so that an adequate evaluation of the total project can be made.
- 39.2 The Owner reserves the right to reject any or all bids, or to accept the bid or combination of bids that they deem most advantageous to the public interest.
- 39.3 Bidders must submit their bids based on the design as set forth in the plans and specifications. Any bids submitted on the basis of unspecified alternate designs will be immediately rejected and returned to the bidder.
- 39.4 The prices bid in the Proposal shall be full compensation for furnishing all material, labor, equipment, and performing all operations required to complete the project ready for use. All materials, labor, equipment, and work required to complete the project ready for use, must be included in the price bid for the various items provided in the Proposal and no other compensation will be allowed.
- 39.5 Prices in the proposal shall be stated in both script and numerals.

# 40. CONTRACT DRAWINGS AND SPECIFICATIONS

- 40.1 All items shown on the drawings or included in the specifications shall be furnished, installed, and connected with accessories and appurtenances as shown or indicated on the plans and in the specifications.
- 40.2 Any work or item called for on the drawings and not particularly mentioned in the specifications, or work and items described in the specifications and not shown on the drawings is to be regarded as included under the contract the same as if set forth in the specifications and exhibited on the drawings.

#### 41. SETTLEMENT OF INSURANCE CLAIMS

- 41.1 Losses insured under policies that include Owner/Engineer as a named insured shall be adjusted with Owner/Engineer and made payable to Owner/Engineer as trustee for the insured's, as their interests may appear.
- 41.2 Owner/Engineer and Contractor waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance, except such rights as they may have to insurance proceeds held by owner as trustee. Contractor shall require similar waivers by Subcontractor as provided in General Conditions.

#### 42. SPECIFICATIONS

The Specifications which govern materials and equipment to be furnished and the work to be performed under this contract are listed in the Table of Contents at the beginning of this volume.

#### 43. PAYMENT

Contractor can make monthly payment requests with retainage withheld until the project is accepted. Retainage shall be 10%.

# 44. EXCAVATION, TRENCHING, AND SHORING

All excavation, trenching, and shoring shall conform to the U.S. Department of Labor, Occupational Safety, and Health Administration Guidelines (Subpart P – Excavation, Trenching, and Shoring). The Contractor will be required to submit an excavation, trenching, and shoring plan to the Engineer for approval prior to construction.

#### **45. BUY AMERICAN**

In accordance with the Buy American provision in Public Law 95-117 (section 215 of Public Law 92-500 as amended) the Contractor agrees that preference will be given to domestic material, by the contractor, subcontractors, material men, and suppliers and owner in the performance of this contract.

#### **46. WAGE SCALE**

All employees of the Contractor on this project shall be paid, at least, the amount shown in the wage decision attached herein.

#### 47. BACKFILL AND PAVEMENT REPAIR

Separate payment <u>WILL NOT</u> be made for repair of gravel, asphaltic or concrete surfaces crossed or damaged by the Contractor's work.

#### 48. NO SEPARATE PAYMENT

Several notes on the plans indicate work to be performed with "No Separate Payment". Contractor shall include the cost of this work in other bid items provided.

#### 49. SPOIL DISPOSAL

The Contractor's bid shall include spoil disposal (offsite) for items that cannot be used for on-site fill (asphalt, concrete, wire, etc.) in accordance with applicable TCEQ regulations.

#### 50. INGRESS/EGRESS

Ingress/Egress to the construction area by the Contractor shall be maintained unless otherwise directed by the Owner, no exceptions. No separate payment will be provided for these services.

# 51. COOPERATION AND COORDINATION WITH PUBLIC

The Contractor shall conduct his work so as to cause the least amount of disruption to the public. Closing of any streets or lanes of traffic will be coordinated with City staff. All citizens along each street will be notified by the Contractor in advance of construction activities. Full street closures will not be allowed on this project. Partial or single-lane detours are allowed if necessary. The Contractor will be responsible for furnishing and using all barricades, warning lights, signs, etc. necessary to protect his work and maintain traffic flow satisfactory to the Owner. Warning devices shall be as required in the Texas Manual on Uniform Traffic Control Devices. All barricades and warning signs shall be well lighted during the hours between sunset and sunrise.

#### 52. VIDEO OF CONSTRUCTION DATA

The Contractor shall provide the City with a video tape showing the construction area in detail prior to construction, to include audio to describe location.

#### 53. SCHEDULE

The Contractor shall submit to the Engineer and Owner a construction schedule on the first day of each month for the duration of the project. Schedule shall include but not be limited to remaining activities, anticipated start/finish time, etc.

#### 54. PUMPING, BAILING AND DRAINING

The Contractor shall immediately remove all surface or seepage water from ditches and other sources which may accumulate during the excavation and construction work by providing the necessary underdrains or otherwise, and by doing the necessary pumping, bailing or draining. The Contractor shall have available at all times sufficient equipment in proper working order for doing the work herein required. All water removed from excavations shall be disposed of in an approved manner so as to not create unsanitary conditions or to interfere unduly with the use of streets, private driveways or entrances. Pumping, bailing, draining, underdrains, ditches, etc., shall be considered incidental work and will not be paid for as separate items, but their cost shall be included in the contract prices bid in the Proposal for the various units of excavation measure.

#### 55. TIME ALLOWED FOR COMPLETION

The time allotted for the completion of all items of work shall be <u>120</u> consecutive calendar days. The Work Order shall consist of a written request by the Engineer for the Contractor to proceed with the construction of the project.

#### 56. BARRICADES AND DANGER SIGNALS

- 56.1 Where the work is carried on, in or adjacent to any street, alley, or public place, the Contractor shall, at his own cost and expense, furnish and erect barricades and/or fences, lights and/or danger signals, and take any other steps necessary for the protection of persons or property.
- 56.2 Barricades shall be painted with a reflectorized paint or scotchlite tape. From sunset to sunrise, the Contractor shall furnish and maintain lights at each barricade. Barricades shall be erected to endeavor to keep vehicles from being driven on or into any work under construction.
- 56.3 The Contractor will be held responsible for all damage to the work due to the failure of barricades, signs, lights, and watchmen to protect it, and whenever evidence is found of such damage, the Owner may order the damaged portion immediately removed and replaced by the Contractor, at his cost and expense. The Contractor's responsibility for the maintenance of barricades, signs, and lights and for providing watchmen shall not cease until the project has been accepted by the Engineer.
- 56.4 The Contractor shall meet all applicable local, state, and federal regulations for barricades and danger signals.

#### 57. SAFETY

- 57.1 Contractor shall place the highest priority on health and safety, and shall maintain a safe working environment during performance of the Work. The site shall be considered to be drug and alcohol free and such policy will be strictly enforced. All employees shall adhere to these policies while on site. Contractor shall comply, and shall secure compliance by its employees, agents, and lower tier Contractors, with all applicable health, safety, and security laws and regulations, any health regulations including without limitation, federal, state and local laws and regulations, and health and safety plans issued by the Owner's Agent as well as all policies and regulations of the Owner. Compliance with such requirements shall represent the minimum standard required of Contractor. Contractor will be performing Work on the Owner's property.
- 57.2 At all times, the Contractor shall provide an on-site construction supervisor. The Contractor's construction supervisor shall hold and document safety meetings.
- 57.3 Contractor agrees to furnish protective devices and clothing as required by applicable laws, regulations, health and safety plans and Owner rules and regulations, and to ensure that such devices or clothing are properly used by its employees, agents,

lower tier Contractors and other invitees of Contractor at the jobsite. Safety protection is required at all times while working onsite including a hardhat, a high visibility, tear-off reflective vest, lace-up leather safety boots with steel shank and steel toes, and safety glasses with permanently affixed side-shields.

#### 58. PROJECT MAINTENANCE

The Contractor shall maintain and keep in good repair the improvements covered by these plans and specifications during the life of his contract. Existing improvements shall at all times be protected by the Contractor during the construction of the work as specified herein All such improvements shall be left in a condition equal to that prior to start of construction.

#### 59. PROPERTY LINES AND MONUMENTS

The Contractor shall protect all property corner markers, and when any such markers or monuments are in danger of being disturbed, they shall be properly referenced and if disturbed, shall be reset at the expense of the Contractor.

#### 60. OFF-SITE STORAGE

Off-site storage for any materials and equipment not incorporated into the Work but included in the Applications for Payment shall not be allowed.

#### 61. NOTICES TO OWNERS AND AUTHORITIES

Utilities and other concerned agencies shall be notified at least 48 hours prior to excavating near underground utilities or pole lines or in accordance with the regulations of the utilities, Texas Digger's Hotline (811), and concerned agencies.

#### 62. UNFAVORABLE CONSTRUCTION CONDITIONS

During unfavorable weather, wet ground, or other unsuitable conditions, the Contractor shall confine its operations to work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by the Contractor to perform the Work in a proper and satisfactory manner.

#### 63. DEWATERING

63.1 The Contractor shall at his own expense remove any water that may be encountered during the course of the work by pumping, well pointing, or other approved methods. The water shall be stored in a storage tank provided by the Contractor and disposed of in accordance with all applicable State rules and regulations. Newly placed concrete or grout shall be adequately protected from possible injury resulting from groundwater or from handling and disposal of water.

- 63.2 All surface drainage or natural waterways shall be controlled by dikes or ditches without damage to adjacent property or structures and without interference with the right of either public or private owners.
- 63.3 No separate payment will be made for dewatering.

# 64. EXISTING STRUCTURES/EQUIPMENT

Exact dimensions of existing structures, buildings, equipment roads, utility locations, etc. shown on the plans have not been field verified by the Engineer. Prior to submittal preparation by the Contractor, or construction activities as applicable, all dimensions of these existing items shall be verified by the Contractor in the field. It shall be the Contractor's responsibility to field verify all field dimensions.

# 12' WATER MAIN LOOP CITY OF SEGUIN BID #24-2014-38

DATE: \_\_\_\_\_

Gentlemen:					
Having carefully examined the Instructions to Bidders, Standard Form of Contract, Specifications, and Plans therein referred to, the undersigned bidder declares that the only person or parties interested in this Bid as Principals are those named herein; that this Bid is made without collusion with any other person, firm or corporation; that the Bidder has carefully examined, and this Bid is made in accordance therewith, locations, conditions and classes of materials of the proposed work; and agrees that the Bidder will provide all the necessary superintendence, labor, machinery, equipment, tools, apparatus and other means of construction, and to complete all the work and furnish all the materials called for in the Contract and Specifications in the manner prescribed therein and according to the requirements of the City Engineer, as therein set forth.					
The Bid Form attached lists the items of construction contemplated in the Plans and Specifications. Bid prices must be shown in words and figures for each item listed in the Proposal, and in the event of a discrepancy, the words shall control.					
It is understood that the following quantities of work to be done are approximate only, and are intended primarily to serve as a guide for the comparison and tabulation of the bids.					
Receipt is hereby acknowledged of the following addenda to the Contract Documents:					
Addendum No.1 datedReceived					
Addendum No.2 datedReceived					
Addendum No.3 datedReceived					
Bidder agrees to perform all of the work listed in the proposal and as described in the					

specifications and shown on the plans, for the following prices:

#### PROPOSAL

# 12" WATER MAIN LOOP CITY OF SEGUIN BID PACKAGE #24-2014-38

Iten No	n Estimated. Quantity	n Description and Unit Price th Words	oittem :	toit Pirce	Lotal Photo Services
100	1 LS	Mobilization		¥I	
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
101	1 LS	Preparing Right-of-Way			
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
413	10 CY	Flowable Backfill (low str	ength)		
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
511	2,458 LF	Street Repair (waterline tre	ench)		
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$
530	1 LS	Barricades, Signs, and Train	ffic Handling		
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$

Hiemi. -Not	Esumated Onambig	Description and Units Ands	orliten.	oningrico In Reuros	Total Pice
540	1 LS	Preparation and Maintenar and all requirements of TP	nce of Storm Wa DES General Pe	ater Pollution Preve ermit No. TXR 150	ention Plan (SWPP)
		FOR	_DOLLARS		
		AND	CENT		•
550	3,940 LF	Trench Excavation Safety	Protection	\$	\$
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
813	50 LF	Service for 6" Firelines			
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$
818	145 LF	6" Waterline, PVC C-900			
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$
818	145 LF	8" Waterline, PVC C-900			
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$
818	3,700 LF	12" Waterline, PVC C-900			
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$

liem No	Prienkiel LOmantia	Description and Unit Price	e of Item	Init Price :	Total 1
824	3 EA	Relay 2" Service (short an	nd long)		
		FOR	DOLLARS		
		AND	_ CENTS	\$	\$
824	1 EA	New Unmetered 2" Service	e (short and long	g)	
		FOR	DOLLARS		
		AND	_ CENTS	\$	\$
828	3 EA	6" Gate Valves	¥		
		FOR	DOLLARS		
		AND	_ CENTS	\$	\$
828	7 EA	8" Gate Valves			
		FOR	_DOLLARS		
		AND	CENTS	\$	\$
828	9 EA	12" Gate Valves			
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
833	1 EA	Meter Box			
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$

Hen No:		Description and Unit.		in Trace in the Court of the Co	Police - 1
833	3 EA	Existing Meter and Ne	w Meter Box Locat	ion	
		FOR	DOLLARS		
		AND	CENTS	\$	_ \$
834	4 EA	Fire Hydrant			
		FOR	DOLLARS		
		AND	CENTS	\$	\$
836	5.5 TON	Pipe Fittings, all sizes	and types		
		FOR	DOLLARS		
		AND	CENTS	\$	\$
840	3 EA	6" Water Tie-In			
		FOR	DOLLARS		
		AND	CENTS	\$	\$
840	3 EA	8" Water Tie-In			
		FOR	DOLLARS		
		AND	CENTS	\$	\$
840	1 EA	12" Water Tie-In			
		FOR	DOLLARS		
		AND	CENTS	\$	\$

	Estimated Otlantity	Description and Unit Prio	e of Item	- Onn Piceri	
841	1 LS	Hydrostatic Testing (all lo	ocations as neede	ed, complete)	The state of the s
		FOR	DOLLARS		
		AND	CENTS	\$	\$
844	5 EA	2" Blowoff, Temporary			
		FOR	DOLLARS		
		AND	_ CENTS	\$	\$
846	1 EA	2" Air Release Valves			
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
856	50 LF	Jacking, Boring, or Tunne	ling – 24" Steel I	Pipe	
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
856	50 LF	Carrier Pipe – 12" PVC C-	900		
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
856	50 LF	Casing or Liner – 24" Stee	l Pipe		
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$

ltem No	Fairmated   Ouznitiv	Description and Unit Price	often	Unit Proces	Total (* 11 Pole
3000	1 LS	Removal, Transportation,			
		FOR	_DOLLARS		
		AND	_ CENTS	\$	\$
3000	1 LS	Asbestos Abatement Work	Plan		
		FOR	_DOLLARS		
		AND	_CENTS	\$	\$
	TOTAL P	PROPOSAL			
		FOR			_DOLLARS
		AND	_CENTS		
				\$	

The above prices shall include all labor, materials, overhead, profit, insurance, etc. to cover the finished work of the kinds called for.

The work proposed to be done shall be accepted when fully completed and finished in accordance with the plans and specifications to the satisfaction of the City Engineer. The undersigned Bidder hereby declares that he has visited the site of the work and has carefully examined the contract documents pertaining to the work covered in the above bid, and that the bid prices contained in the proposal have been carefully checked and are submitted as correct and final.

The Contractor agrees to complete the project on which he has bid, as specified and shown on the plans, within <u>120</u> consecutive calendar days.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) calendar days after the scheduled closing time for receiving bids.

Enclosed with this proposal is a Proposal Bond in the sum of 5% of total proposal, which it is agreed shall be collected and retained by the Owner as liquidated damages in the event his proposal is accepted by the Owner within ninety (90) days after the bids are received and the undersigned fails to execute the contract for the Owner within ten (10) days after date said proposal is accepted, otherwise said check or bond shall be returned to the undersigned upon demand.

Business Name	Authorized Signature
Address	Printed Name
City, State, Zip Code	Title
Phone No	
Fax No	Date
Email Address:	

# CITY OF SEGUIN 12" WATER MAIN LOOP BID #24-2014-38 BIDDER'S EXCEPTION FORM

This form must be completed and signed by an authorized representative of the company. Failure to do so may cause total bid to be rejected. If no exceptions are to proposed, indicate by stating "No Exceptions to Specifications" and sign in the appropriate space.

STATEMENT OF BIDDER: WE PROPOSE THE FOLLOWING EXCEPTIONS TO THE NOTED BID ITEM:

BID ITEM #	EXCEPTION
NOTE: If additional pages Deviations" on this page.	are needed, attach to the back of this page and note "See Page 2-
Company Name	Authorized Signature

#### **EXPERIENCE RECORD**

Contractor shall list in the spaces provided below, similar projects of equal or greater dollar amount that have been installed and are in operation within the past five (5) years. Separate sheets may be attached.

NO.	LOCATION	DESCRIPTION (Size, Type, Length)	CONTACT PERSON PHONE NUMBER	DATE OF INSTALLATION
1				
2				
3				
4				
5				
6				
7				
8				
10				

# STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

Name of Bidder:				
Address:				
Date Organized:	Date In	Date Incorporated		
Number of Years in cont	tracting business under present	name:		
List Names of Owners, I	Partners, or Shareholders:			
		The state of the s		
		-		
CONTRACTS ON HAI				
Contract	Dollar Amount	Anticipated Completion Date		
Type of work performed	by your company:			
	omplete any work awarded to y			
	on a contract?			
List the projects most reco	ently completed by your firm (i	include project of similar importance):		
Project	Dollar Amount	Mo/Yr Completed		

Major equipment available for this contract:	
Attach resume(s) for the principal member(s) of your as the proposed superintendent for the project.	organization, including the officers as well
Credit available: \$	
Bank reference and bank officer:	
The undersigned hereby authorizes and requests any information requested by the comprising this Statement of Bidder's Qualifications.	person, firm, or corporation to furnish anyin verification of the recitals
Executed this day of	, 2013.
By:	(Title)

#### STANDARD FORM OF AGREEMENT

8

STATE OF TEXAS

hereinafter termed CONTRACTOR.

COUNTY OF	§		
THIS AGREEMENT between the,	, made and entered into this _ TEXAS, a municipal and State of	corporation, of	A.D. 2013, by and the County of acting through
	thereunto duly authorized	so to do, Party	of the First Part.
hereinafter termed OWNER,	and	of the City of	
County of	, and State of	nancana and a same and a significant and a sign	the Second Part,

Party of the Second Part,

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, and under the conditions expressed in the bond bearing even date herewith, the said CONTRACTOR hereby agrees with the said OWNER to commence and complete the construction of certain improvements generally described as follows:

and all extra work in connection therewith, under the terms as stated in the General Conditions of the Agreement and at his (or their) own proper cost and expenses to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said construction, in accordance with the Advertisement for Proposals, General and Special Conditions of Agreement, Plans and other drawings and printed or written explanatory matter thereof, and the Specifications and addenda therefore, as prepared by City of Seguin, 205 N. River, Seguin, Texas 78155, and Klotz Associates, 7550 IH-10 West, Northwest Center, Suite 300, San Antonio, TX 78229, herein entitled the ENGINEER, each of which has been identified by the CONTRACTOR and the ENGINEER, together with the CONTRACTOR'S written Proposal, and the performance and Payment Bonds hereto attached; all of which are made a part hereof and collectively evidence and constitute the entire contract (hereinafter collectively called the "Contract Documents" or the "Contract").

The CONTRACTOR hereby agrees to commence work within ten (10) days after the date written notice to do so shall have been given to him, and to complete the same by 120 consecutive calendar days, subject to such extensions of time as are provided by the General and Specific Conditions.

The OWNER agrees to pay the CONTRACTOR in current funds the price or prices shown in the proposal, which forms a part of this contract, such payments to be subject to the General and Special Conditions of the contract.

IN WITNESS WHEREOF, the parties to these presents have executed this Agreement in the year and day first above written.

Party of the First Part (OWNER)	Party of the Second Part (CONTRACTOR)
Ву:	Ву:
ATTEST:	ATTEST:
Executed originals.	

## PERFORMANCE BOND

STATE OF			
COUNTY OF			
We,		(C	ontractor name),
		(address), as Pri	ncipal, and
1 11 10		Chand come	nonvinoma) C
are held and firmly bound unto the Cit of	y of Seguin, To	exas, as Owner, in th	e penal sum
		_dollars (\$	), for th
payment of which the Principal and Su executors, successors and assigns, join	rety bind them tly and several	selves and their heir	s, administrators,
The Principal has entered for the			h the Owner date ect"), which is full
incorporated into this bond by reference	e.	(110)	oce ), winch is full

The condition of this obligation is that if the Principal faithfully and promptly performs all work for the Project in accordance with the Contract Documents, and faithfully and promptly observes and performs all of its covenants, conditions, duties and obligations under the Contract Documents according to their true intent and meaning, then this obligation will be satisfied; otherwise it will remain in full force and effect.

If the Owner declares the Principal to be in default under the Contract, the Surety agrees to either 1) promptly remedy the default, or 2) faithfully and promptly perform and complete the Project in accordance with the Contract Documents.

The Surety, for value received, agrees that no modification, change order, extension of time, amendment or addition to the Contract, or to the plans, specifications, drawings or other Contract Documents, will in any way affect the Surety's obligation on this bond, and the Surety waives notice of any such modification, change order, extension of time, amendment or addition.

If Surety does not proceed as provided in Paragraph 2 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner.

Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

Any proceeding, legal or equitable, under this Bond may only be instituted in the district courts of Guadalupe County, Texas, and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

The Surety certifies that it is authorized and admitted to write surety bonds in Texas. If this bond exceeds \$100,000.00 the surety certifies that it either 1) holds a certificate of authority from the United States Secretary of the Treasury to qualify as a surety on obligations permitted or required under federal law, or 2) has obtained qualified reinsurance for any liability in excess of \$100,000.00 from a reinsurer that is authorized and admitted as a reinsurer in the State of Texas, and is the holder of a certificate of authority from the United States Secretary of the Treasury to qualify as a surety or reinsurer on obligations permitted or required under federal law. This bond is governed by Chapter 2253 of the Texas Government Code, and it is provided solely for the protection of the Owner.

This bond is filed with the Owner in Guadalupe County, Texas, and the Principal and Surety agree that mandatory venue for any legal action filed upon this bond is in the District Courts of Guadalupe County, Texas.

Executed and sealed by the Pri	ncipal and Surety
on	
	Surety
By:	Ву:
Title:	Title:
Address:	Address:
Telephone Number:	Facsimile Number:
(SEAL)	(SEAL)

The name and address of the Resident Agent of Surety is:

THIS BOND MUST BE ISSUED AFTER EXECUTION OF OWNER-CONTRACTOR AGREEMENT BY BOTH PARTIES. ATTACH ORIGINAL POWER OF ATTORNEY FOR THE SURETY'S REPRESENTATIVE TO THIS BOND.

THE ADDRESS OF THE SURETY COMPANY TO WHICH ANY NOTICE OF CLAIM SHOULD BE SENT MAY BE OBTAINED FROM THE TEXAS DEPARTMENT OF INSURANCE BY CALLING 1-800-252-3439.

## Payment Bond

CTATE OF

STATE OF	
COUNTY OF	
	actor name), of
and (addres	s), as Principal,
Surety, are held and firmly bound unto the City of Seguin, Texas, as Owner, i	(0)
for the payment of which the Principal and Surety bind themselves a administrators, executors, successors and assigns, jointly and severally, by this be	nd their being
The Principal has entered into a Contract with the Owner dated("Project"), which is fully incorporated intreference.	for the o this bond by

The condition of this obligation is that if the Principal pays all persons who supply public work labor or material for the Project, then this obligation will be satisfied; otherwise this bond will remain in full force and effect.

This bond is provided under the provisions of Chapter 2253 of the Texas Government Code, as amended and all liabilities on this bond shall be determined in accordance with the provisions of that statute to the same extent as if it were copied at length in this document.

The Surety, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or the plans, specifications, drawings or other Contract Documents, or to the work performed under the Contract Documents, shall in any way affect its obligation on this bond, and the Surety waives notice of any such change, extension of time, alteration or addition.

The Surety certifies that it is authorized and admitted to write surety bonds in Texas. If this bond exceeds \$100,000.00 the surety certifies that it either 1) holds a certificate of authority from the United States Secretary of the Treasury to qualify as a surety on obligations permitted or required under federal law, or 2) has obtained qualified reinsurance for any liability in excess of \$100,000.00 from a reinsurer that is authorized and admitted as a reinsurer in the State of Texas, and is the holder of a certificate of authority from the United States Secretary of the Treasury to qualify as a surety or reinsurer on obligations permitted or required under federal law. This bond is governed by Chapter 2253 of the Texas Government Code, and it is provided solely for the protection of the Owner.

Mandatory venue for any legal action filed upon this bond is in the District Courts of Guadalupe County, Texas.

Principal	Surety
By:	By:
Title:	Title:
Address:	
	Telephone Number: Facsimile Number:
(SEAL)	(SEAL)
The name and address of the Resid	lent Agent of the Surety is:

THIS BOND MUST BE ISSUED AFTER EXECUTION OF OWNER-CONTRACTOR AGREEMENT BY BOTH PARTIES. ATTACH ORIGINAL POWER OF ATTORNEY FOR THE SURETY'S REPRESENTATIVE TO THIS BOND.

THE ADDRESS OF THE SURETY COMPANY TO WHICH ANY NOTICE OF CLAIM SHOULD BE SENT MAY BE OBTAINED FROM THE TEXAS DEPARTMENT OF INSURANCE BY CALLING 1-800-252-3439.

# GENERAL CONDITIONS OF AGREEMENT

## 1.0 DEFINITION OF TERMS

1.01 OWNER, CONTRACTOR AND ENGINEER. The Owner, the Contractor and the Engineer are those persons or organizations identified as such in the Agreement and are referred to throughout the Contract Documents as if singular in number and masculine in gender.

The term Engineer means the Klotz Associates or his duly authorized representative. The Engineer shall be understood to be the Engineer of the Owner, and nothing contained in the Contract Documents shall create any contractual or agency relationship between the Engineer and the Contractor.

The Owner may include any authorized representative of Owner as may be set forth in the SPECIAL CONDITIONS.

1.02 CONTRACT DOCUMENTS. The Contract Documents shall consist of the Advertisement for Proposals, Special Instructions, Proposal, Signed Agreement, Performance and Payment Bonds, Special Bonds (when required), General Conditions of the Agreement, Technical Specifications, Plans, and all modifications thereof incorporated in any of the documents before the execution of the Agreement.

The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. In case of conflict between any of the Contract Documents, priority of interpretation shall be in the following order: signed Agreement, Performance and Payment Bonds, Special Bonds (if any), Proposal, Advertisement for Proposals, Special Conditions, Special Specifications, Technical Specifications, Plans, General Contract Conditions, and General Conditions of Agreement.

- 1.03 SUB-CONTRACTOR. The term Sub-Contractor, as employed herein, includes only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnishes material not so worked.
- 1.04. WRITTEN NOTICE. Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, return receipt requested, to the last business address known to him who gives the notice.
- 1.05. WORK. The Contractor shall provide and pay for all materials, supplies, machinery, equipment, tools, superintendence, labor, services, insurance, permits, certificates, licenses, and all water, light, power, fuel, transportation and other facilities necessary for the execution and completion of the work covered by the contract

documents. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of a good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials. Materials of work described in words which so applied have a well known technical or trade meaning shall be held to refer to such recognized standards.

- 1.06. EXTRA WORK. The term "Extra Work' as used in this contract shall be understood to mean and include all work that may be required by the Engineer or Owner to be done by the Contractor to accomplish any change, alteration or addition to the work shown upon the plans, or reasonable implied by the specifications, and not covered by the Contractor's proposal.
- 1.07. CALENDAR DAY. "Calendar Day" is any day of the week or month, no days being excepted.
- 1.08. SUBSTANTIALLY COMPLETED. By the term "substantially completed, is meant that the structure has been made suitable for use or occupancy or the facility is in condition to serve its intended purpose, but still may require minor miscellaneous work and adjustment.

# 2. RESPONSIBILITIES OF THE ENGINEER AND THE CONTRACTOR

- 2.01. OWNER-ENGINEER RELATIONSHIP. The duties, responsibilities and limitations of authority of the Engineer as the Owner's representative during construction are as set forth in the CONTRACT Documents and shall not be extended or limited without written consent of the Owner and Engineer. The Engineer will advise and consult.
- 2.02. PROFESSIONAL INSPECTION BY ENGINEER. The Engineer shall make periodic visits to the site to familiarize himself generally with the progress of the executed work and to determine if such work generally meets the essential performance and design features and the technical and functional engineering requirements of the Contract Documents; provided and except, however, that the Engineer shall not be responsible for making any detailed, exhaustive, comprehensive or continuous on-site inspection of the quality or quantity of the work or be in any way responsible, directly or indirectly, for the construction means, methods, techniques, sequences, quality, procedures, programs, safety precautions or lack of same incident thereto on in connection therewith. Notwithstanding any other provision of this agreement or any other Contract Document, the Engineer shall not be any way responsible or liable for any acts, errors, omissions or negligence of the Contractor, any subcontractor or any of the Contractor's or subcontractor's agents, servants, or employees or any other person, firm or corporation performing or attempting to perform any of the work.
- 2.03. PAYMENTS FOR WORK. The Owner shall review Contractor's applications for payment and supporting data, determine the amount owed to the Contractor and approve, in writing, payment to Contractor in such amounts; such approval of payment to Contractor constitutes a representation to the Owner or

Engineer's professional judgment that the work has progressed to the point indicated to the made any examination to determine how or for what purpose Contractor has used the moneys paid on account of the Contract price.

- **2.04. OBJECTIONS AND DETERMINATIONS.** The Owner shall determine all claims disputes and other matters in question between the Contractor and the Owner relating to the execution or progress of the work or the interpretation of the Contract Documents. The Engineer's decision shall be rendered in writing within a reasonable time and shall be binding.
- 2.05. CONTRACTOR'S DUTY AND SUPERINTENDENCE. The Contractor shall give adequate attention to the faithful prosecution and completion of this contract and shall keep on the work, during its progress, a competent superintendent and necessary assistants. The

Superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.

The Contractor is and at all times shall remain an independent contractor, solely responsible for the manner and method of completing his work under this contract with full power and authority to select the means, method and manner of performing such work, so long as such methods do not adversely affect the completed improvements, the Owner, and Engineer being interested only in the result obtained and conformity of such completed improvements to the Contract Documents.

Likewise, the Contractor shall be solely responsible for the safety of himself, his employees and other persons, as well as for the protection of the safety of the improvements being erected and the property of himself or any other person, as a result of his work hereunder. Shop or working construction drawings and any specifications shown in relation thereto, as well as any additional information concerning the work to be performed, passing from or through the Engineer, shall not be interpreted as requiring or allowing Contractor to deviate from the plans and specifications, the intent of such drawings, specifications and any other such instructions being to define with particularity the agreement of the parties as to the work the Contractor is to perform. Contractor shall be fully and completely liable at his own expense, for design, construction, installation and use, or non-use, of all items and methods incident to performance of the contract, and for all loss, damage or injury incident thereto, either to person or property, including, without limitation, the adequacy of all temporary supports, shoring, bracing, scaffolding, machinery or equipment, safety precautions or devices, and similar items or devices used by him during construction.

Any review of work in process, or any visit or observation during construction, or any clarification of plans and specifications, by the Owner or Engineer, or any agent, employee, or representative of either of them, whether through personal observation on the project site or by means of approval of shop drawings for temporary construction or construction processes, or by other means or method, is agreed by the Contractor to be for the purpose of observing the extent and nature of work completed or being performed, as measured against the drawings and specifications constituting the contract, or for the

purpose of enabling Contractor to more fully understand the plans and specifications so that the completed construction work will conform thereto, and shall in no way relieve the Contractor from full and complete responsibility for the proper performance of his work on the project, including but without limitation the propriety of means and methods of the Contractor in performing said contract, and the adequacy of any designs, plans or other facilities for accomplishing such performance. Deviation by the Contractor from plans and specifications that may have been in evidence during any such visitations or observation by Engineer, or any of his representatives whether called too the Contractor's attention or not, shall in no way relieve Contractor from his responsibility to complete all work in accordance with said plans and specifications.

- 2.06 CONTRACTOR'S UNDERSTANDING. It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this contract. No verbal agreement or conversation with any officer, agent or employee of the Owner or Engineer, either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.
- 2.07 CHARACTER OF WORKMEN. The Contractor agrees to employ only orderly and competent men, skillful in the performance of the type or work required under this contract, to do the work; and agrees that whenever the Engineer shall inform him in writing that any man or men on the work are, in his opinion, incompetent, unfaithful or disorderly, such man or men shall be discharged from the work and shall not again be employed on the work without the Engineer's written consent.
- 2.08 CONTRACTOR'S BUILDINGS. The building of structures for housing men, or the erection of tents or other forms of protection, will be permitted only at such places as the Engineer shall direct, and the sanitary conditions of the grounds in or about such structures shall at all times be maintained in a manner satisfactory to the Engineer.
- 2.09 SANITATION. Necessary sanitary conveniences for the use of laborers on the work, properly secluded from public observation, shall be constructed and maintained by the Contractor in such manner and at such points as shall be approved by the Engineer, and their use shall be strictly enforced.
- 2.10 SHOP DRAWINGS. The Contractor shall submit to the Engineer, with such promptness as to cause no delay in his own work or in that of any other contractor, four checked copies, unless otherwise specified, of all shop and/or setting drawings and schedules required for the work of the various trades, and the Engineer shall pass upon them with reasonable promptness, noting desired corrections. The Contractor shall make any corrections required by the Engineer, file with him two corrected copies and furnish such other copies as may be needed. The Engineer's approval of such drawings or schedules shall not relieve the Contractor from responsibility for deviations from

drawings or specifications, unless he has in writing called the Engineer's attention to such deviations at the time of submission, nor shall it relieve him from responsibility for errors of any sort in ship drawings or schedules. It shall be the Contractor's responsibility to fully and completely review all shop drawings to ascertain their effect on his ability to perform the required contract work in accordance with the plans and specifications and within the contract time.

Such review by the Engineer shall be for the sole purpose of determining the sufficiency of said drawings or schedules to result in finished improvements in conformity with the plans and specifications, and shall not relieve the Contractor of his duty as an independent contractor as previously set forth, it being expressly understood and agreed that the Engineer does not assume any duty to pass upon the propriety or adequacy of such drawings or schedules, or any means or methods reflected thereby, in relation to the safety of either person or property during Contractor's performance hereunder.

2.11 PRELIMINARY APPROVAL. The Engineer shall not have the power to waive the obligations of this contract for the furnishing by the Contractor of good material, and of his performing good work as herein described, in full accordance with the plans and specifications. No failure or omission of the Engineer to discover, object to or condemn any defective work or material shall release the Contractor from the obligations to fully and properly perform the contract, including without limitation, the obligation to at once tear out, remove and properly replace the same at any time prior to final acceptance upon the discovery of said defective work or material; provided, however, that the Engineer shall, upon request of the Contractor, inspect and accept or reject any material furnished, and in event the material has been once accepted by the Engineer, such acceptance shall be binding on the Owner, unless it can be clearly shown that such materials furnished does not meet the specifications for this work.

Any questioned work may be ordered taken up or removed for re-examination by the Engineer prior to final acceptance, and if found not in accordance with the specifications for said work, all expense of removing, re-examination and replacement shall be borne by the Contractor, otherwise the expense thus incurred shall be allowed as EXTRA WORK, and shall be paid for by the Owner; provided that, where inspection or approval is specifically required by the specifications prior to performance of certain work, should the Contractor proceed with such work without requesting in writing prior inspection or approval, he shall bear all expense of taking up, removing, and replacing this work if so directed by the Engineer.

2.12 DEFECTS AND THEIR REMEDIES. It is further agreed that if the work or any part thereof, or any material brought on the site of the work for use in the work or selected for the same, shall be deemed by the Engineer as unsuitable or not in conformity with the specifications, the Contractor shall, after receipt of written notice thereof from the Engineer, forthwith remove such material and rebuild or otherwise remedy such work so that it shall be in full accordance with this contract.

2.13 CHANGES AND ALTERATIONS. The Contractor further agrees that the Owner may make such changes and alterations as the Owner may see fit, in the line, grade, form, dimensions, plans or materials for the work herein contemplated, or any part thereof, either before or after the beginning of the construction, without affecting the validity of this contract and the accompanying Performance and Payment bonds.

If such changes or alterations diminish the quantity of the work to be done, they shall not constitute the basis for a claim for damages for anticipated profits on the work that may be dispensed with. If the amount of work is increased, such additional work shall be paid for as provided under Extra Work. In case the Owner shall make such changes or alterations as shall make useless any work already done or material already furnished or used in said work, then the Owner shall recompense the Contractor for any material or labor so used, and for any actual loss occasioned by such change, due to actual expenses incurred in preparation for the work as originally planned.

## 3. GENERAL OBLIGATIONS AND RESPONSIBILITIES

- 3.01 KEEPING PLANS AND SPECIFICATIONS ACCESSIBLE. The Contractor will be supplied with two (2) copies of the plans, specifications and special provisions, and he shall have available at the work site at all times one copy of each. He shall give the work his constant attention to facilitate the progress thereof and shall cooperate with the Engineer in every way possible. He shall have at all times a satisfactory and competent English-speaking Superintendent at the work site, authorized to receive orders and to act for him. The Contractor shall designate to the Owner in writing the name of such Superintendent, and he shall be furnished by the Contractor regardless of how much of the work may be sublet.
- 3.02 AUTHORITY AND DUTY OF INSPECTORS. Inspectors will be authorized to inspect all work done and all materials furnished. Such inspections may extend to all or to any part of the work and to the preparation or manufacture of the materials to be used. An Inspector will be assigned to the work by the Owner and will report to the Owner as to the progress of the work and the manner in which it is being performed; also to report whenever it appears that the materials furnished and the work performed by the Contractor fail to fulfill the requirements of the specifications and contract; and to call the attention of the Contractor to any such failure or other infringement. Such inspection will not relieve the Contractor from any obligation to perform the work in accordance with the requirements of the specifications.

In case of any dispute arising between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the Inspector will have the authority to reject materials or suspend work until the questions at issue can be referred to and decided by the Engineer. The Inspector will not be authorized to revoke, alter, enlarge, or release any requirement of these specifications, or to approve or accept any portion of work, or to issue instructions contrary to the plans and specifications. He will in no case act as foreman or perform other duties for the Contractor nor interfere with the management of the work.

- 3.02 OWNERSHIP OF DRAWINGS. All drawings, specifications and copies thereof furnished by the Engineer shall not be reused on other work, and, with the exception of signed contract sets, are to be returned to him on request, at the completion of the work. All models are the property of the Owner.
- 3.03 ADEQUACY OF DESIGN. It is understood that the Owner believes it has employed competent engineers and designers. It is, therefore, agreed that, as to the Contractor only, the Owner shall be responsible for the adequacy of the design, sufficiency of the Contract Documents, and the practicability of the operations of the completed project; provided the Contractor has complied with the requirements of the said Contract Documents, all approved modifications thereof, and additions and alterations thereto approved in writing by the Owner. The burden of proof of such compliance shall be upon the Contractor to show that he has complied with the said requirements of the Contract Documents, approved modifications thereof and all approved additions and alterations thereto.
- 3.04 RIGHT OF ENTRY. The Owner reserves the right to enter the property or location on the works herein contracted for are to be constructed or installed, by such agent or agents as he may elect, for the purpose of inspecting the work, or for the purpose of constructing or installing such collateral work as said Owner may desire.
- 3.05 COLLATERAL CONTRACTS. The Owner agrees to provide by separate contract or otherwise, all labor and material essential to the completion of the work specifically excluded from this contract, in such manner as not to delay the progress of the work or damage said Contractor, except where such delays are specifically mentioned elsewhere in the Contract Documents.
- 3.06 DISCREPANCIES AND OMISSIONS. It is further agreed that it is the intent of this contract that all work must be done and all material must be furnished in accordance with the generally accepted practice, and in the event of any discrepancies between the separate contracts documents, the priority of interpretation defined under "Contract Documents" shall govern. In the event that there is still any doubt as to the meaning and intent of any portion of the contract, specifications or drawings, the Engineer shall define which is intended to apply to the work.
- 3.07 EQUIPMENT, MATERIALS AND CONSTRUCTION PLANT. The Contractor shall be responsible for the care, preservation, conservation, protection and replacement of all materials, supplies, machinery, equipment, tools, apparatus, accessories, facilities, all means of construction, and any and all parts of the work, whether the Contractor has been paid, partially paid, or not paid for such work, or whether Owner has taken possession of completed portions of such work, until the entire work is completed and accepted.
- 3.08 PROTECTION AGAINST ACCIDENT TO EMPLOYEES AND THE PUBLIC. The Contractor shall at all times exercise reasonable precautions for

the safety of employees and others on or near the work and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building and construction codes. All machinery and equipment and other physical hazards shall be guarded in accordance with the "Manual of Accident Prevention in Construction" of the Associated General Contractors of America except where incompatible Federal, State, or Municipal laws or regulations. The Contractor shall provide such machinery guards, safe walkways, ladders, bridges, gangplanks, and other safety devices. The safety precautions actually taken and their adequacy shall be the sole responsibility of the Contractor, acting at his discretion as an independent contractor.

3.09 PERFORMANCE AND PAYMENT BONDS. Unless otherwise specified, it is further agreed by the parties to this Contract that the Contractor will execute separate performance and payment bonds, each in the sum of one hundred (100) percent of the total contract price, in standard forms for this purpose, guaranteeing faithful performance of the work and the fulfillment of any guarantees required, and further guaranteeing payment to all persons supplying labor and materials or furnishing him any equipment in the execution of the Contract, and it is agreed that this contract shall not be in effect until such performance and payment bonds are furnished and approved by the Owner.

Unless otherwise approved in writing by the Owner, the surety company underwriting the bonds shall be acceptable according to the latest list of companies holding certificates of authority from the appropriate authority of the State of Texas.

Unless otherwise stated, the cost of the premium for the performance and payment bonds shall be included in the Contractor's proposal.

- 3.10 LOSSES FROM NATURAL CAUSES. Unless otherwise specified, all loss or damage to the Contractor arising out of the nature of the work to be done, or from the action of the elements, or from any unforeseen circumstance in the prosecution of the same, or from unusual obstructions or difficulties which may be encountered in the prosecution of the work, shall be sustained and borne by the Contractor at his own cost and expense.
- 3.11 PROTECTION OF ADJOINING PROPERTY. The Contractor shall take proper means to protect the adjacent or adjoining property or properties in any wan encountered, which might be injured or seriously affected by any process of construction to be undertaken under this Agreement, from any damage or injury by reason of said process of construction; and he shall be liable for any and all claims for such damage on account of his failure to fully protect all adjoining property. The Contractor agrees to indemnify, save and hold harmless the Owner and Engineer against any claim or claims for damages due to any injury to any adjacent or adjoining property, arising or growing out of the performance of the contract.
- 3.12 PROTECTION AGAINST CLAIMS OF SUB-CONTRACTORS, LABORERS, MATERIALMEN, AND FURNISHERS OF MACHINERY,

EQUIPMENT AND SUPPLIES. The Contractor agrees that he will indemnify and save the Owner and Engineer harmless from all claims growing out of the demands of sub-contractors, laborers, workmen, mechanics, material men and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract, regardless whether caused wholly or in part by the negligence or gross negligence of any party indemnified hereunder and regardless of the application of any worker's compensation or similar statute which might apply to any employees or agents of the Contractor or any Subcontractor. When so desired by the Owner, the Contractor shall furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the Contractor fails so to do, then the Owner may, at its sole option, either pay directly any unpaid bills of which the Owner has written notice and deduct such amount from the next partial payment due to Contractor, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to liquidate any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payments to the Contractor shall be resumed in full in accordance with the terms of this contract; but in no event shall the provisions of the sentence be construed to impose any obligation upon the Owner by either the Contractor or his Surety.

3.13 PROTECTION **AGAINST** ROYALTIES OR **PATENTED** Contractor shall pay all royalties and license fees, and shall provide for INVENTION. the use of any design, device, material or process covered by letters patent or copyright by suitable legal agreement with the patentee or owner. The Contractor shall defend all suits or claims for infringement of any patent or copyright rights and shall indemnify and save the Owner and Engineer harmless from any loss on account thereof, except that the Owner shall defend all such suites and claims and shall be responsible for all such loss when a particular design, device, material or process or the product of a particular manufacturer or manufacturers is specified or required by the Owner; provided, however, if choice of alternate design, device, material or process is allowed to the Contractor, then Contractor shall indemnify and save Owner harmless from any loss on account thereof. If the material or process specified or required by the Owner is an infringement, the Contractor shall be responsible for such loss unless he promptly gives such information to the Owner.

3.14 LAWS AND ORDINANCES. The Contractor shall at all times observe and comply with all Federal, State and local laws, ordinances and regulations, which any manner affect the contract or the work, and shall indemnify and save harmless the Owner and Engineer against any claim arising from the violation of any such laws, ordinances, and regulations whether by the Contractor or his employees, except where such violations are called for by the provisions of the Contract Documents. If the Contractor observes that the plans and specifications are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in the contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Engineer, he shall bear all costs arising there from. In case the Owner

is a body politic and corporate, the law from which it derives its powers, insofar as the same regulates the objects for which, or the manner in which, or the conditions under which the Owner may enter into contract, shall be controlling, and shall be considered as part of this contract, to the same effect as thought embodied herein.

- 3.15 ASSIGNMENT AND SUBLETTING. The Contractor further agrees that he will retain personal control and will give his personal attention to the fulfillment of this contract and that he will not assign by Power of Attorney, or otherwise, or sublet said contract without the written consent of the Owner, and that no part or feature of the work will be sublet to anyone objectionable to the Engineer or the Owner. The Contractor further agrees that the subletting of any portion or feature of the work, or materials required in the performance of this contract, shall not relieve the Contractor from his full obligations to the Owner, as provided by this Agreement.
- 3.16 INDEMNIFICATION. The Contractor shall defend, indemnify and hold harmless the Owner and the Engineer and their respective officers, agents and employees, from and against all damages, claims, losses, demands, suits, judgments and costs, including reasonable attorneys' fees and expenses, arising out of or resulting from the performance of the work, provided that any such damages, claim, loss, demand, suit, judgment, cost or expense:
- (1) Is attributable to bodily injury, sickness, disease or death or to injury or destruction or tangible property (other than the work itself) including the loss of use resulting there from; and,
- (2) Is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, the Owner, anyone directly or indirectly employed by any one of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

The obligation of the Contractor under this Paragraph shall not extend to the liability of the Engineer, his agents or employees arising out of the preparation or approval of maps, drawings, reports, surveys, Change Orders, designs or specifications, or the giving of or the failure to give directions or instructions by the Engineer, his agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.

- 3.17 INSURANCE. The Contractor at his own expense shall purchase, maintain and keep in force such insurance as will protect him from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any one of them or by anyone for whose acts any of them may be liable, including the acts of Owner:
- (1) Workmen's compensation claims, disability benefits and other similar employee benefit acts;

- (2) Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees, and claims insured by usual bodily injury liability coverages;
- (3) Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees, and claims insured by usual bodily injury liability coverages; and
- (4) Claims for damages because of injury to or destruction of tangible property, including loss of use resulting there from.
- 3.17.1 POLICIES OF INSURANCE. Before commencing any of the work, Contractor shall file with the Owner valid Policies of Insurance acceptable to the Owner and Engineer. Such Policies shall contain a provision that coverages afforded under the Policies will not be canceled until at least thirty days' prior written notice has been given to the Owner.

The Contractor shall also file with the Owner valid Policies of Insurance covering all sub-contractors.

3.17.2 WAIVER OF SUBROGATION. Contractor, its agents, employees and subcontractors, hereby waive any and all rights of subrogation against Owner or Engineer arising out of any claim or incident for which insurance coverage or indemnification is required under the Contract Documents.

#### 4. PROSECUTION AND PROGRESS

4.01 TIME AND ORDER OF COMPLETION. It is the meaning and intent of this contract, unless otherwise herein specifically provided, that the Contractor shall be allowed to prosecute his work at such times and seasons, in such order of precedence, and in such manner as shall be most conducive to economy of construction; provided however, that the order and the time of prosecution shall be such that the work shall be substantially completed as a whole and in part in accordance with this contract, the plans and specifications, and within the time of completion designated in the Proposal; provided, also that when the Owner is having other work done, either by contract or by his own force, the Owner may direct the time and manner of constructing the work done under this contract, so that conflict will be avoided and the construction of the various works being done for the Owner shall be harmonized.

The Contractor shall submit, at such times as may reasonably be requested by the Engineer, schedules which shall show the order in which the Contractor proposes to carry on the work, with dates at which the Contractor will start the several parts of the work, and estimated dates of completion of the several parts.

4.02 EXTENSION OF TIME. Should the Contractor be delayed in the completion of the work by any act or neglect of the Owner or Engineer, or of any employee of either, or by other contractors employed by the Owner, or by changes ordered in the work, or by strikes, lockouts, fires, and unusual delays by common carriers, or by uncontrollable cause or causes beyond the Contractor's control, and the

Owner decides such cause justifies the delay, then an extension of time sufficient to compensate for the delay as determined by the Owner shall be allowed for completing the work; provided, however, that the Contractor shall give the Engineer prompt notice in writing of the cause of such delay.

4.03 HINDRANCES AND DELAYS. No clams shall be made by the Contractor for damages resulting from hindrances or delays from any cause (except where the work is stopped by order of the Owner) during the progress of any portion of the work embraced in this contract. In case said work shall be stopped by the act of the Owner, then such expense as in the judgment of the Engineer is caused by such stoppage of said work shall be paid by the Owner to the Contractor.

#### 5. MEASUREMENT AND PAYMENT

- **5.01 QUANTITIES AND MEASUREMENTS.** No extra or customary measurements of any kind will be allowed, but the actual measured and/or computed length, area, solid contents, number and weight only shall be considered, unless otherwise specifically provided.
- 5.02 ESTIMATED QUANTITIES. This agreement, including the specifications and plans, is intended to show clearly all work to be done and material to be furnished hereunder. Where the estimated quantities are shown for the various classes of work to be done and material to furnished under this contract, they are approximate and are to be used only as a basis for estimating the probable cost of the work and for comparing the proposals offered for the work. It is understood and agreed that the actual amount of work to be done and material to be furnished under this contract may differ somewhat from these estimates.
- 5.03 PRICE OF WORK. In consideration of the furnishing of all the necessary labor, equipment and material, and the completion of all work by the Contractor, and on the completion of all work and of the delivery of all material embraced in this Contract in full conformity with the specifications and stipulations herein contained, the Owner agrees to pay the CONTRCTOR the prices set forth in the Proposal hereto attached, which has been made a part of this contract. The Contractor hereby agrees to receive such prices in full payment for furnishing all material and all labor required for the aforesaid work, also for all expense incurred by him, and for well and truly performing the same and the whole thereof in the manner and according to this Agreement.
- 5.04 PARTIAL PAYMENTS. On or before the 25<sup>th</sup> day or each month, the Contractor shall prepare and submit to the Owner an application for payment showing as completely as practicable the total value of the work done by the Contractor up to and including the last day immediately preceding the date of such application and the value of all sound materials delivered on the site of the work that are to be fabricated into the work.

The Engineer shall verify Contractor's application, shall either approve or modify the total value of the work done by Contractor and the value of materials delivered on the site, and shall submit to Owner such application for payment as approved or modified with Engineer's verification affixed thereto on or before the 5<sup>th</sup> days of the month following the receipt of the application from Contractor.

The Owner shall pay the Contractor on or before the 25<sup>th</sup> day of the month in which the Owner receives the approved application from the Engineer the total amount of the approved and verified application, less ten (10) percent of the amount thereof, which ten (10) percent shall be retained until final payment, and further less all previous payments and all further sums that may be retained by the Owner under the terms of this Agreement. It is understood, however, that in case the whole work be near to completion and some unexpected and unusual delay occurs due to no fault or neglect on the part of the Contractor, the Owner may, upon written recommendation of the Engineer, pay a reasonable and equitable portion of the retainage to the Contractor, or the Contractor, at the Owner's option, may be relieved of the obligation to fully complete the work and, thereupon, the Contractor shall receive payment of the balance due him under the contract subject only to the conditions stated under "Final Payment." Any such payments of retainage by Owner to Contractor prior to final payment must be agreed to in writing by the surety or sureties on Contractor's payment and performance bonds.

The Contractor shall submit to the Owner, copies of the material invoices with the application for payment. No payment will be made to the Contractor until the quantities or work submitted have been checked and verified by the Engineer.

- 5.05 USE OF COMPLETED PORTIONS. The Owner shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions may not have expired. Such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents, nor shall the risk of loss change from Contractor to Owner. If such prior use increases the cost of or delays the work, the Contractor shall be entitled to such extra compensation, or extension of time, or both, as the Engineer may determine.
- 5.07 FINAL COMPLETION AND ACCEPTANCE. The Contractor shall notify the Owner when, in the Contractor's opinion, the contract is "substantially completed" and when so notifying the Owner, the Contractor shall furnish to the Engineer in writing a detailed list of unfinished work. The Engineer/Owner will review the Contractor's list of unfinished work and will add thereto such items as the Contractor has failed to include. The substantial completion of the structure or facility shall not excuse the Contractor from performing all of the work undertaken, whether of a minor or major nature, and thereby completing the structure of the facility if accordance with the Contract Documents.

Within ten (10) days after the Contractor has given the Owner written notice that the work has been completed, or substantially completed, the Engineer and the Owner shall inspect the work and within said time, if the work be found to be completed or substantially completed in accordance with the Contract Documents, the Engineer shall issue to the Owner and the Contractor his Certificate of Completion, and thereupon it shall be the duty of the Owner within ten (10) days to issue a Certificate of Acceptance of the work to the Contractor or to advise the Contractor in writing of the reason for the non-acceptance.

Where the work consists of concrete pavements or concrete base, the "Final Acceptance" will not release the Contractor from responsibility for the thickness of the concrete, which will be determined by means of taking cores from the pavement. The coring of the pavement will be done within 90 days from completion of the pavement.

Final acceptance will not relieve the Contractor from any obligation for replacement or repair of any work or materials due to latent defects of materials or workmanship.

- 5.08 AFFIDAVIT OF BILLS PAID. Upon completion of the project and final acceptance by the Owner, the Contractor shall furnish the Owner with an affidavit certifying that all suppliers and subcontractors have been paid, before final payment will be made by Owner.
- 5.09 FINAL PAYMENT. Upon the issuance of the Certificate of Completion, the Owner shall proceed to make final measurements and prepare a final statement of the value of all work performed and materials furnished under the terms of the Agreement and shall certify same to the Owner. Thereafter, Owner shall pay to the Contractor, on or after the 30<sup>th</sup> day and before the 35<sup>th</sup> day, the balance due the Contractor under the terms of this Agreement, provided he has fully performed his contractual obligations under the terms of this contract and provided the Contractor has delivered to the Owner the affidavit of bills paid, and a surety release. Neither the Certificate of Acceptance nor the final payment, nor any provision in the Contract Documents, shall relieve the Contractor of the obligation for fulfillment of any warranty which may be required.
- warrants materials and workmanship and that the work is in conformance with Project Manual and Plans included in this Contract for a period of one year from date of Certificate of Final Acceptance of entire project. Said warranty binds Contractor to correct any work that does not conform to such Project Manual and Plans or defects in workmanship or materials furnished under this Contract which may be discovered within said one-year period. Contractor shall at his own expense correct such defect within 30 days after receiving written notice of such defect from Owner by repairing same to condition called for in the Contract. Should Contractor fail or refuse to repair such defect within said 30 day period or to provide acceptable assurances that such repair work will be completed within a reasonable time thereafter, Owner may repair or cause to be repaired any such defect by calling Contractor's "Performance Bond".

- **5.10 PAYMENTS WITHHELD.** The Owner may, on account of subsequently discovered evidence, withhold or nullify the whole or part of any certificate to such extent as may be necessary to protect him from loss on account of:
  - (a) Defective work not remedied.
  - (b) Claims filed or reasonable evidence indicating probable filing of claims.
  - (c) Failure of the Contractor to make payments properly to subcontractors or for material or labor.
  - (d) Damage to another contractor.
  - (e) Reasonable doubt that the work can be completed for the unpaid balance for the contract amount.
- (f) Reasonable indication the work will not be completed within the contract time.
- (g) Failure to submit record/"as built" drawings as required by the Contract Documents.

When the above grounds are removed or the Contractor provides a surety bond satisfactory to the Owner, which will protect the Owner in the amount withheld payment shall be made for amounts withheld because of them.

5.11 DELAYED PAYMENTS. Should the Owner fail to make payment to the Contractor of the sum named in any approved partial or final statement, when payment is due, the Owner shall pay to the Contractor, in addition to the sum shown as due by such statement, interest thereon at the rate of six (6) percent per annum, unless otherwise specified, from date due as provided under "Partial Payments" and "Final Payments," until fully paid, which shall fully liquidate any injury to the Contractor growing out of such delay in payment, but the right is expressly reserved to the Contractor in the event payments be not promptly made, as provided under "Partial Payments." To at any time thereafter treat the contract as abandoned by the Owner and recover compensation, as provided under "Abandonment of Contract," unless such payments are withheld in accordance with the provisions of "Payments Withheld."

## 6. EXTRA WORK AND CLAIMS

6.01 CHANGE ORDERS. Without invalidating this Agreement, the Owner may, at any time or from time to time, order additions, deletions or revisions to the work; such changes will be authorized by written Change Order prepared by the Engineer for execution by the Owner and the Contractor. The Change Order shall set forth the basis for any change in contract price, as hereinafter set forth for Extra Work, and any change in contract time which may result from the change.

In the event the Contractor shall refuse to execute a Change Order which has been prepared and executed by the Owner, the Owner may in writing instruct the Contractor to proceed with the work as set forth in the Change Order and the Contractor may make claim against the Owner for Extra Work involved therein, as hereinafter provided.

6.02 MINOR CHANGES. The Owner may authorize minor changes in the work not inconsistent with the overall intent of the Contract Documents and not involving an increase in Contract Price. If the Contractor believes that any minor change or alteration authorized by the Engineer involves Extra Work and entitles him to an increase in the Contract Price, the Contractor shall make written request to the Engineer for a written Field Order. In such case, the Contractor by copy of his communication to the Engineer or otherwise in writing shall advise the Owner of his request to the Engineer for a written Field Order and that the work involved may result in an increase in the Contract Price.

Any request by the Contractor for a change in Contract Price shall be made in writing in accordance with the provisions of this section prior to beginning g the work covered by the proposed change.

**6.03 EXTRA WORK.** It is agreed that the basis of compensation to the Contractor for work either added or deleted by a Change Order or for which a claim for Extra Work is made shall be determined by one or more of the following methods:

Method (A) - By agreed unit prices; or

Method (B) - By agreed lump sum; or

Method (C) – If neither method (A) or (B) be agreed upon before the Extra Work is commenced, then the Contractor shall be paid the "actual field cost" of the work, plus fifteen (15) percent.

In the event said Extra Work be performed and paid for under Method (C), then the provisions of this paragraph shall apply and the "actual field cost" is hereby defined to include the cost to the Contractor of all workmen, such as foreman, timekeepers, mechanics and laborers, and materials, supplies, teams, trucks, rentals on machinery and equipment, for the time actually employed or used on such Extra Work, plus actual transportation charges necessarily incurred, together with all power, fuel, lubricants, water and similar operating expenses, also all necessary incidental expenses incurred directly on account of such Extra Work, including Social Security Old Age Benefits and other payroll taxes, and a ratable proportion of premiums on Performance and Payment Bonds and Maintenance Bonds, Public Liability and Property Damage and Workmen's Compensation, and all other insurance as may be required by any law or ordinance, or directed by the Owner, or by them agreed to. The Owner may direct the form in which accounts of the "actual field cost" shall be kept and the records of these accounts shall be made available to the Owner. The Owner may also specify in writing, before the work commences, the method of doing the work and the type and kind of machinery and equipment to be used; otherwise these matters shall be determined by the Contractor. Unless otherwise agreed upon, the prices for the use of machinery and equipment shall be determined by using 100 percent, unless otherwise specified, of the latest schedule of Equipment Ownership Expense adopted by the Associated General Contractors of America. Where practicable the terms and prices for the use of machinery and equipment shall be incorporated in the written Change Order. The fifteen percent (15%) of the "actual field cost" to be paid the Contractor shall cover and compensate him for his profit, overhead, general superintendence and field office expense and all other elements

of cost and expense not embraced within the "actual field cost" as herein defined; save that where the Contractor's Camp or Field Office must be maintained primarily on account of such Extra Work, then the cost to maintain and operate the same shall be included in the "actual field cost."

No claim for Extra Work of any kind will be allowed unless ordered in writing by the Owner. In case any orders or instructions, either oral or written, appear to the Contractor to involve Extra Work for which he should receive compensation or an adjustment in the construction time, he shall make written request to the Engineer for written order authorizing such Extra Work. Should a difference of opinion arise as to what does or does not constitute Extra Work, or ass to the payment therefore, and the Engineer insists upon its performance, the Contractor shall proceed with the work after making written request for written order and shall keep an accurate account of the "actual field cost" thereof, as provided under Method (C). The Contractor will thereby preserve the right to submit the matter of payment to a court of general jurisdiction to decide the matter, otherwise the Contractor shall waive all claims for payment for EXTRA WORK.

## 7. ABANDONMENT OF CONTRACT

7.01 ABANDONMENT BY CONTRACTOR. In case the Contractor should abandon and fail or refuse to resume work within ten (10) days after written notification from the Owner, or if the Contractor fails to comply with the orders of the Engineer, when such orders are consistent with the Contract Documents, then, and in that case, where performance and payment bonds exist, the Sureties on these bonds shall be notified in writing and directed to complete the work, and a copy of said notice shall be delivered to the Contractor.

After receiving said notice of abandonment, the Contractor shall not remove from the work any machinery, equipment, tools, materials or supplies then on the job, but the same, together with any materials and equipment under contract for the work, may be held for use on the work by the Owner or the Surety on the performance bond, or another contractor in completion of the work; and the Contractor shall not receive any rental or credit therefore (except when used in connection with Extra Work, where credit shall be allowed as provided for under Section 6, Extra Work and Claims), it being understood that the use of such equipment and materials will ultimately reduce the cost to complete the work and be reflected in the final settlement.

In case the Surety should fail to commence compliance with the notice for completion hereinbefore provided for, within ten (10) days after service of such notice, then the Owner may provide for completion of the work in either of the following elective manners:

7.01.1 The Owner may employ such force of men and use such machinery, equipment, tools, materials and supplies as said Owner may deem necessary to complete the work and charge the expense of such labor, machinery, equipment, tools, materials and supplies to said Contractor, and expense so charged shall be deducted and paid by the Owner out of such moneys as may be due, or that may thereafter at any time become due

to the Contractor under and by virtue of this Agreement. In case such expense is less than the sum which would have been payable under this contract, if the same had been completed by the contractor, then said Contractor shall receive the difference. In case such expense is greater than the sum which would have been payable under this contract, if the same had been completed by said Contractor, then the Contractor and/or his Surety shall pay the amount of such excess to the Owner; or

7.01.2 The Owner under sealed bids, after five (5) days notice published one or more times in a newspaper having general circulation in the county of the location of the work, may let the contract for the completion of the work under substantially the same terms and conditions which are provided in this contract. In the case of any increase in cost to the Owner under the new contract as compared to what would have been the cost under this contract, such increase shall be charged to the Contractor and the Surety shall be and remain bound therefore. However, should the cost to complete any such new contract prove to be less than what would have been the cost to complete under this contract, the Contractor and/or his Surety shall be credited therewith.

When the work shall have been substantially completed the Contractor and his Surety shall be so notified and Certificates of Completion and Acceptance, as provided in Paragraph 5.06 hereinabove, shall be issued. A complete itemized statement of the contract accounts, certified to by the Engineer as being correct, shall then be prepared and delivered to the Contractor and his Surety, whereupon the Contractor and/or his Surety, or the Owner as the case may be, shall pay the balance due as reflected by said statement, within fifteen (15) days after the date of such Certificate of Completion.

After final completion of the work and in the event the statement of accounts shows that the cost to complete the work is less than that which would have been the cost to the Owner had the work been completed by the Contractor under the terms of this contract; or when the Contractor and/or his Surety shall pay the balance shown to be due by them to the Owner, then all machinery, equipment, tools, materials or supplies left on the site of the work shall be turned over to the Contractor and/or his Surety. Should the cost to complete the work exceed the contract price, and the Contractor and/or his Surety fail to pay the amount due the Owner within the time designated hereinabove, and there remains any machinery, equipment, tools, materials or supplies on the site of the work, notice thereof, together with an itemized list of such equipment and materials, shall be mailed to the Contractor and his Surety at the respective addresses designated in this contract; provided, however, that actual written notice given in any manner will satisfy this condition. After mailing or other giving of such notice, such property shall be held at the risk of the Contractor and his Surety subject only to the duty of the Owner to exercise ordinary care to protect such property. After fifteen (15) days from the date of said notice the Owner may sell such machinery, equipment, tools, materials or supplies and apply the net sum derived from such sale to the credit of the Contractor and his Surety. Such sale may be made at either public or private sale, with or without notice, as the Owner may elect. The Owner shall release any machinery, equipment, tools, materials, or supplies, which remain on the work, and belong to persons other than the Contractor or his Surety, to their proper owners.

7.02. ABANDONMENT BY OWNER. In case the Owner shall fail to comply with the terms of this contract within ten (10) days after written notification by the Contractor, then the Contractor may suspend or wholly abandon the work, and may remove there from all machinery, tools and equipment, and all materials on the site of the work that have not been included in payments to the Contractor and have not been wrought into the work. Thereupon the Engineer shall make an estimate of the total amount earned by the Contractor, which estimate shall include the value of all work actually completed by said Contractor, the value of all partially completed work at a fair and equitable price, and the amount of all Extra Work performed at the prices agreed upon, or provided for by the items of this contract, and a reasonable sum to cover the cost of any provisions made by the Contractor to carry the whole work to completion and which cannot be utilized. The Engineer shall then make a final statement of the balance due the Contractor by deducting from the above estimate all previous payments by the Owner and all other sums that may be retained by the Owner under the terms of this Agreement and shall certify same to the Owner who shall pay to the Contractor on or before thirty (30) days after the date of delivery to Owner of such certified final statement.

# **Prevailing Wage Decisions**

Please see attached Wage Rates.

## WAGE RATES

General Decision Number: TX130016 01/04/2013 TX16

Superseded General Decision Number: TX20120016

State: Texas

Construction Types: Heavy and Highway

Counties: Atascosa, Bandera, Bastrop, Bell, Bexar, Brazos, Burleson, Caldwell, Comal, Coryell, Guadalupe, Hays, Kendall, Lampasas, McLennan, Medina, Robertson, Travis, Williamson and Wilson Counties in Texas.

HEAVY (excluding tunnels and dams, not to be used for work on Sewage or Water Treatment Plants or Lift / Pump Stations in Bell, Coryell, McClennon and Williamson Counties) and HIGHWAY Construction Projects

Modification Number

Publication Date 01/04/2013

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\* SUTX2011-006 08/03/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and		
Structures)\$	12.56	
ELECTRICIAN\$	26.35	
FORM BUILDER/FORM SETTER		
Paving & Curb\$ Structures\$		
LABORER		
Asphalt Raker\$		
Flagger\$ Laborer, Common\$		
Laborer, Utility\$		
Pipelayer\$ Work Zone Barricade	12.79	
Servicer\$	11.85	
PAINTER (Structures)\$	18.34	
POWER EQUIPMENT OPERATOR:		
Agricultural Tractor\$		
Asphalt Distributor\$	15.55	
Asphalt Paving Machine\$ Boom Truck\$	14.35	
Broom or Sweeper\$ Concrete Pavement		

Finishing Machine\$ 15.48
Crane, Hydraulic 80 tons
or less\$ 18.36
Crane, Lattice Boom 80
tons or less\$ 15.87 Crane, Lattice Boom over
80 tons\$ 19.38
Crawler Tractor\$ 15.67
Directional Drilling
Locator\$ 11.67
Directional Drilling
Operator\$ 17.24 Excavator 50,000 lbs or
Less\$ 12.88
Excavator over 50,000 lbs\$ 17.71
Foundation Drill, Truck
Mounted\$ 16.93
Front End Loader, 3 CY or
Less\$ 13.04
Front End Loader, Over 3 CY.\$ 13.21 Loader/Backhoe\$ 14.12
Mechanic\$ 17.10
Milling Machine \$ 14.18
Motor Grader, Fine Grade\$ 18.51
Motor Grader, Rough\$ 14.63
Pavement Marking Machine\$ 19.17
Reclaimer/Pulverizer\$ 12.88
Roller, Asphalt\$ 12.78
Roller, Other\$ 10.50 Scraper\$ 12.27
Spreader Box\$ 14.04
Trenching Machine, Heavy\$ 18.48
Servicer\$ 14.51
Steel Worker
Reinforcing\$ 14.00
Structural\$ 19.29
TRAFFIC SIGNAL INSTALLER
Traffic Signal/Light Pole Worker\$ 16.00
WOLKEL \$ 16.00
TRUCK DRIVER
Lowboy-Float\$ 15.66
Off Road Hauler\$ 11.88
Single Axle\$ 11.79
Single or Tandem Axle Dump Truck\$ 11.68
Tandem Axle Tractor w/Semi
Trailer\$ 12.81
WELDER\$ 15.97

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

#### Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

#### Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued

as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

#### WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be:
- an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations Wage and Hour Division U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board

U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

## **General Contract Conditions**

## Contract and Contract Documents

The Plans, Specifications and Addenda, hereinafter enumerated in Paragraph 1 of the Supplemental General Conditions shall form part of this contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth.

#### **DEFINITIONS**

Whenever used in any of the contract Documents, the following meanings shall be given to the terms here in defined:

- A. The term "Contract" means the Contract executed between the (Name of City of Seguin), hereinafter called the City of Seguin and (Name of Construction Co.), hereinafter called Contractor, of which these GENERAL CONDITIONS, form a part.
- B. The term "Project Area" means the area within which is the specified Contract limits of the improvements contemplated to be constructed in whole or in part under this contract.
- C. The term "Engineer" means (Klotz Associates), Engineer in charge, serving the City of Seguin with architectural or engineering services, his successor, or any other person or persons, employed by the City of Seguin for the purpose of directing or having in charge the work embraced in this Contract.
- D. The term "Contract Documents" means and shall include the following: Advertisement for Proposals, Special Instructions, Proposal, signed Agreement, Performance and Payment Bonds, Special Bonds (when required), General Conditions of the Agreement, Technical Specifications, Plans, and al modifications thereof incorporated in any of the documents before the execution of the Agreement.

## SUPERVISION BY CONTRACTOR

- A. Expect where the Contractor is an individual and gives his personal supervision to the work, the Contractor shall provide a competent superintendent, satisfactory to the City of Seguin and the Engineer, on the work at all times during working hours with full authority to act for him. The contractor shall also provide an adequate staff for the proper coordination and expediting of his work.
- B. The Contractor shall lay out his own work and he shall be responsible for all work executed by him under the Contract. He shall verify all figures and

elevations before proceeding with the work and will be held responsible for any error resulting from his failure to do so.

#### SUBCONTRACTS

- A. No proposed subcontractor shall be disapproved by the city/county except for cause.
- B. The Contractor shall be as fully responsible to the city/county for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them.
- C. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work and required compliance by each subcontractor with the applicable provisions of the Contract.
- D. Nothing contained in the Contract shall create any contractual relation between any subcontractor and the City of Seguin.

#### FITTING AND COORDINATION OF WORK

The Contractor shall be responsible for the proper fitting of all work and for the coordination of the operations of all trades, subcontractors, or material suppliers engaged upon this Contract.

#### PAYMENTS TO CONTRACTOR

#### A. Partial Payments

1. On or before the 25<sup>th</sup> day or each month, the Contractor shall prepare and submit to the Engineer an application for payment showing as completely as practicable the total value of the work done by the Contractor up to and including the last day immediately preceding the date of such application and the value of all sound materials delivered on the site of the work that are to be fabricated into work.

The Engineer shall verify Contractor's application, shall either approve or modify the total value of the work done by the Contractor and the value of Materials delivered to the site, and shall submit to Owner such application for payment as approved or modified with Engineer's verification affixed thereto on or before the 5<sup>th</sup> days of the month following the receipt of the application from Contractor.

The Owner shall pay the Contractor on or before the 25th day of the month in which the Owner receives the approved application from the Engineer the total amount of the approved and verified application, less ten (10) percent of the amount thereof, which ten (10) percent shall be retained until final payment, and further less all previous

payments and all further sums that may be retained by the Owner under the terms of this Agreement. It is understood, however, that in case the whole work be near to completion and some unexpected and unusual delay occurs due to no fault or neglect on the part of the Contractor, the Owner may, upon written recommendation of the Engineer, pay a reasonable and equitable portion of the retainage to the Contractor, or the Contractor, at the Owner's option, may be relieved of the obligation to fully complete the work and, thereupon, the Contractor shall receive payment of the balance due him under the contract subject only to the conditions stated under "Final Payment." Any such payments of retainage by Owner to Contractor prior to final payment must be agreed to in writing by the surety or sureties on Contractor's payment and performance bonds.

The Contractor shall submit to the Engineer, copies of the material invoices with the application for payment. No payment will be made to the Contractor until the quantities or work submitted have been checked and verified by the Engineer.

2. Monthly or partial payments made by the City of Seguin to the Contractor are moneys advanced for the purpose of assisting the contractor to expedite the work of construction. The Contractor shall be responsible for the care and protection of all materials and work upon which payments have been made until final acceptance of such work and materials by the City of Seguin. Such payments shall not constitute a waiver of the right of the City of Seguin to require the fulfillment of all terms of the Contract and the delivery of all improvements embraced in this Contract complete and satisfactory to the City of Seguin in all details.

#### B. Final Payment

- After final inspection and acceptance by the City of Seguin of all work under the Contract, the Contractor shall prepare his requisition for final payment which shall be based upon the careful inspection of each item of work at the applicable unit prices stipulated in the Agreement. The total amount of the final payment due the Contractor under this contract shall be the amount computed as described above less allprevious payments.
- 2. The City of Seguin before paying the final estimate, shall require the Contractor to furnish releases or receipts from all subcontractors having preformed any work and all persons having supplied materials, equipment (installed on the Project) and services to the Contractor, if the City of Seguin deems such action advisable, make payment in part or in full to the Contractor without requiring the furnishing of such releases or receipts and any payments made shall in no way impair the obligations of any surety or sureties furnished under this Contract.

3. Any amount due the City of Seguin under Liquidated Damages shall be deducted from the final payment due the contractor.

## C. Payments Subject to Submission of Certificates

Each payment to the Contractor by the City of Seguin shall be made subject to submission by the Contractor or all written certifications required of him and his subcontractors.

## D. Withholding Payments

The City of Seguin may withhold from any payment due the Contractor whatever is deemed necessary to protect the City of Seguin, and if so elects, may also withhold any amounts due the Contractor to any subcontractors or material dealers, for work performed or material furnished by them. The foregoing provisions shall be construed solely for the benefit of the City of Seguin and will not require the City of Seguin to determine or adjust any claims or disputes between the Contractor and his subcontractors or material dealers, or to withhold any moneys for their protection unless the City of Seguin elects to do so. The failure or refusal of the City of Seguin to withhold any moneys from the Contractor shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this Contract.

#### CHANGES IN THE WORK

- A. The City of Seguin may make changes in the scope of work required to be performed by the Contractor under the Contract without relieving or releasing the Contractor from any of his obligations under the Contract or any guarantee given by him pursuant to the Contract provisions, and without affecting the validity of the guaranty bonds, and without relieving or releasing the surety or sureties of said bonds. All such work shall be executed under the terms of the original Contract unless it is expressly provided otherwise.
- B. Except for the purpose of affording protection against any emergency endangering health, life, limb or property, the Contractor shall make no change in the materials used or in the specified manner of constructing and/or installing the improvements or supply additional labor, services or materials beyond that actually required for the execution of the Contract, unless in pursuance of a written order form the City of Seguin authorizing the Contractor to proceed with the change. No claim for an adjustment of the Contract Price will be valid unless so ordered.
- C. If applicable unit prices are contained in the Agreement, the City of Seguin may order the Contractor to proceed with desired unit prices specified in the Contract; provided that in case of a unit price contract the net value of all changes does not increase the original total amount of the agreement by more

than twenty-five percent (25%) or decrease the original the total amount by eighteen percent (18%) for counties or twenty-five percent (25%) for cities.

- D. Each change order shall include in its final form:
  - 1. A detailed description of the change in the work.
  - 2. The Contractor's proposal (if any) or a confirmed copy thereof.
  - 3. A definite statement as to the resulting change in the contract price and/or time.
  - 4. The statement that all work involved in the change shall be performed in accordance with contract requirements except as modified by the change order.
  - 5. The procedures as outlined in this Section for a unit price contract also apply in any lump sum contract.

#### CLAIMS FOR EXTRA COST

- A. If the Contractor claims that any instructions by Drawings or otherwise involve extra cost or extension of time, he shall, within ten days after the receipt of such instructions, and in any event before proceeding to execute the work, submit his protest thereto in writing to the City of Seguin, stating clearly and in detail the basis of his objections. No such claim will be considered unless so made.
- B. Claims for additional compensation for extra work, due to alleged errors in ground elevations, contour lines, or bench marks, will not be recognized unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material, or performing more work, than would be reasonably estimated from the Drawings and maps issued.
- C. Any discrepancies, which may be discovered between actual conditions and those, represented by the Drawings and maps shall be reported at once to the City of Seguin and work shall not proceed except at the Contractor's risk, until written instructions have been received by him from the City of Seguin.
- D. If, on the basis of the available evidence, the City of Seguin determines that an adjustment of the Contract Price and/or time is justifiable, a change order shall be executed.

#### TERMINATION, DELAYS, AND LIQUIDATED DAMAGES

A. Right of the City of Seguin to Terminate Contract.

In the event that any of the provisions of this contract are violated by the Contractor, or by any of his subcontractors, the City of Seguin may serve written notice upon the Contractor and the Surety of its intention to terminate the contract. The notices shall contain the reasons for such intention to terminate the contract, and unless such violation or delay shall cease and satisfactory arrangement of correction be made within ten days, the contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the City of Seguin shall immediately serve notice thereof upon the Surety and the Contractor. The Surety shall have the right to take over and perform the contract. Provided, however, that is the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the City of Seguin may take over the work and complete the project by bid/contract or by force account at the expense of the Contractor and his Surety shall be liable to the City of Seguin for any excess cost incurred. In such event the City of Seguin may take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefore.

#### B. Liquidated Damages for Delays.

If the work is not completed within the time stipulated in the applicable bid for Lump Sum or Unit Price Contract provided, the Contractor shall pay to the City of Seguin as fixed, agreed, and liquidated damages (it being impossible to determine the actual damages occasioned by the delay) the amount of (\$\frac{\scrttent{SEE THE END OF THIS SECTION}}{\scrttent{DON}}\$ for each calendar day of delay, until the work is completed. The Contractor and his sureties shall be liable to the City of Seguin for the amount thereof.

#### C. Excusable Delays.

The right of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with liquidated damages for any delays in the completion of the work due to:

- (1) Any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, national defense, or any other national emergency:
- (2) Any acts of the City of Seguin:
- (3) Causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, acts of another Contractor in the performance of some other contract with the City of Seguin, fires, floods, epidemics, quarantine, restrictions, strikes,

freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, cyclones and other extreme weather conditions.

Provided, however, that the Contractor promptly notifies the City of Seguin within then (10) days in writing of the cause of the delay. Upon receipt of such notification, the City of Seguin shall ascertain the facts and the cause and extent of delay. If, upon the basis of the facts and the terms of this contract, the delay is properly excusable, the City of Seguin shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

### ASSIGNMENT OR NOVATION

The Contractor shall not assign or transfer, whether by an assignment or novation, any of its rights, duties, benefits, obligations, liabilities, or responsibilities under this Contract without the written consent of the City of Seguin; provided, however, that assignment to banks or other financial institutions may be made without the consent of the City of Seguin. No assignment or notation of this Contract shall be valid unless the assignment or notation expressly provides that the assignment of any of the Contractor's rights or benefits under the Contract is subject to a prior lien for labor performed, services rendered, and materials, tools, and equipment supplied for the performance of the work under this Contract in favor of all persons, firms, or corporations rendering such labor or services or supplying such materials, tools, or equipment.

### DISPUTES

- A. All disputes arising under this Contract or its interpretation except those disputes covered by **FEDERAL LABOR STANDARDS PROVISIONS** whether involving law or fact or both, or extra work, and all claims for alleged breach of contract shall, within ten (10) days of commencement of the dispute, be presented by the Contractor to the City of Seguin for decision. Any claim not presented within the time limit specified in this paragraph shall be deemed to have been waived, except that if the claim is of a continuing character and notice of the claim is not given within ten (10) days of its commencement, the claim will be considered only for a period commencing then (10) days prior to the receipt of the City of Seguin.
- B. The Contractor shall submit in detail his claim and his proof thereof.
- C. If the Contractor does not agree with any decision of the City of Seguin, he shall in no case allow the dispute to delay the work but shall notify the City of Seguin promptly that he is proceeding with the work under protest.

# TECHNICAL SPECIFICATIONS AND DRAWINGS

Anything mentioned in the Technical Specifications and not shown on the Drawings or vice versa, shall be of like effect as if shown on or mentioned in both. In case of difference between Drawings and Technical Specifications, the Technical Specifications

shall govern. In case of any discrepancy in Drawings, or Technical Specifications, the matter shall be immediately submitted to the City of Seguin, without whose decision, said discrepancy shall not be adjusted by the Contractor, save only at his own risk and expense.

### SHOP DRAWINGS

- A. All required shop drawings, machinery details, layout drawings, etc. shall be submitted to the Engineer in six (6) copies for approval sufficiently in advance of requirements to afford ample time for checking, including time for correcting, resubmitting and rechecking if necessary. The Contractor may proceed, only at his own risk, with manufacture or installation of any equipment or work covered by said shop drawings, etc. until they are approved and no claim, by the Contractor, for extension of the contract time shall be granted by reason of his failure in this respect.
- B. Any drawings submitted without the Contractor's stamp of approval will not be considered and will be returned to him for proper resubmission. If any drawings show variations from the requirements of the Contract because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment of contract price and/or time, otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract even though the drawings have been approved.
- C. If a shop drawing is in accordance with the contract or involves only a minor adjustment in the interest of the City of Seguin not involving a change in contract price or time; the engineer may approve the drawing. The approval shall not relieve the Contractor from his responsibility for adherence to the contract or for any error in the drawing.

### REQUESTS FOR SUPPLEMENTARY INFORMATION

It shall be the responsibility of the Contractor to make timely requests of the City of Seguin for any additional information not already in his possession which should be furnished by the City of Seguin under the terms of this Contract, and which he will require in the planning and execution of the work. Such requests may be submitted from time to time as the need approaches, but each shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay. Each request shall be in writing, and list the various items and the latest date by which each will be required by the Contractor. The first list shall be submitted within two weeks after Contract award and shall be as complete as possible at this time. The Contractor shall, if requested, furnish promptly any assistance and information the Engineer may require in responding to these requests of the Contractor. The Contractor shall be fully responsible for any delay in his work or to others arising from his failure to comply fully with the provision of this section.

# MATERIALS AND WORKMANSHIP

- A. Unless otherwise specifically provided for in the technical specifications, all workmanship, equipment, materials and articles incorporated in the work shall be new and the best grade of the respective kinds for the purpose. Where equipment, materials, articles or workmanship are referred to in the technical specifications as "equal to" any particular standard, the Engineer shall decide the question of equality.
- B. The Contractor shall furnish to the City of Seguin for approval the manufacturer's detailed specifications for all machinery, mechanical and other special equipment, which he contemplates installing together with full information as to type, performance characteristics, and all other pertinent information as required, and shall likewise submit for approval full information concerning all other materials or articles which he proposes to incorporate.
- C. Machinery, mechanical and other equipment, materials or articles installed or used without such prior approval shall be at the risk of subsequent rejection.
- D. Materials specified by reference to the number or symbol of a specific standard, shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the Invitation for Bids, except as limited to type, class or grade, or modified in the technical specifications shall have full force and effect as though printed therein.
- E. The City of Seguin may require the Contractor to dismiss from the work such employee or employees as the City of Seguin or the Engineer may deem incompetent, or careless, or insubordinate.

# SAMPLES, CERTIFICATES AND TESTS

- A. The Contractor shall submit all material or equipment samples, certificates, affidavits, etc., as called for in the contract documents or required by the Engineer, promptly after award of the contract and acceptance of the Contractor's bond. No such material or equipment shall be manufactured or delivered to the site, except at the Contractor's own risk, until the required samples or certificates have been approved in writing by the Engineer. Any delay in the work caused by late or improper submission of samples or certificates for approval shall not be considered just cause for an extension of the contract time.
- B. Each sample submitted by the Contractor shall carry a label giving the name of the Contractor, the project for which it is intended, and the name of the producer. The accompanying certificate or letter from the Contractor shall state that the sample complies with contract requirements, shall give the name and brand of the product, its place of origin, the name and address of the

producer and all specifications or other detailed information which will assist the Engineer in making a prompt decision regarding the acceptability of the sample. It shall also include the statement that all materials or equipment furnished for use in the project will comply with the samples and/or certified statements.

- C. Approval of any materials shall be general only and shall not constitute a waiver of the City of Seguin's right to demand full compliance with Contract requirements. After actual deliveries, the Engineer will have such check tests made as he deems necessary in each instance and may reject materials and equipment and accessories for cause, even though such materials and articles have been given general approval. If materials, equipment or accessories which fail to meet check tests have been incorporated in the work, the Engineer will have the right to cause their removal and replacement by proper materials or to demand and secure such reparation by the Contractor as is equitable.
- D. All testing of materials required under these specifications shall be performed by an approved agency for testing materials. The Contractor shall make the nomination of the laboratory and the payment for such services. The Contractor will pay for any retest required because of failure of the initial test.

#### PERMITS AND CODES

A. The Contractor shall give all notices required by and comply with all applicable laws, ordinances, and codes of the local Governments. All construction work and/or utility installations shall comply with all applicable ordinances, and codes including all written waivers. Before installing any work, the Contractor shall examine the drawings and technical specifications for compliance with applicable ordinances and codes and shall immediately report any discrepancy to the City of Seguin. Where the requirements of the drawings and technical specifications fail to comply with such applicable ordinances or codes, the City of Seguin will adjust the Contract by Change Order to conform to such ordinances or codes (unless waivers in writing covering the difference have been granted by the governing body or department) and make appropriate adjustment in the Contract Price or stipulated unit prices.

Should the Contractor fail to observe the foregoing provisions and proceed with the construction and/or install any utility at variance with any applicable ordinance or code, including any written waivers (notwithstanding the fact that such installation is in compliance with the drawings and technical specifications), the Contractor shall remove such work without cost to the City of Seguin.

B. The Contractor shall at his own expense, secure and pay for all permits for street pavement, sidewalks, shed, removal of abandoned water taps, sealing of

house connection drains, pavement cuts, buildings, electrical, plumbing, water, gas and sewer permits required by the local regulatory body or any of its agencies.

C. The Contractor shall comply with applicable local laws and ordinances governing the disposal of surplus excavation, materials, debris and rubbish on or off the Project Area and commit no trespass on any public or private property in any operation due to or connected with the improvements contained in this Contract.

### CARE OF WORK

- A. The Contractor shall be responsible for all damages to person or property that occur as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance.
- B. The Contractor shall provide sufficient competent watchmen, both day and night, including Saturdays, Sundays, and holidays, from the time the work is commenced until final completion and acceptance.
- C. In an emergency affecting the safety of life, limb or property, including adjoining property, the Contractor, without special instructions or authorization from the City of Seguin is authorized to act at his discretion to prevent such threatened loss or injury, and he shall so act. He shall likewise act if instructed to do so by the City of Seguin.
- D. The Contractor shall avoid damage as a result of his operations to existing sidewalks, streets, curbs, pavements, utilities (except those which are to be replaced or removed), adjoining property, etc., and he shall at his own expense completely repair any damage thereto caused by his operations.
- E. The Contractor shall shore up, brace, underpin, secure, and protect as maybe necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be in any way affected by the excavations or other operations connected with the construction of the improvements included in this Contract. The Contractor shall be responsible for the giving of any and all required notices to any adjoining or adjacent property owner or other party before the commencement of any work. The Contractor shall indemnify and save harmless the City of Seguin from any damages on account settlements or the loss of lateral support of adjoining property and from all loss or expense and all damages for which the City of Seguin may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

### ACCIDENT PREVENTION

- A. No laborer or mechanic employed in the performance of this Contract shall be required to work in surroundings or under working conditions, which are unsanitary, hazardous, or dangerous to his health or safety, are determined under construction safety and health standards promulgated by the Secretary of Labor.
- B. The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work.
- C. The Contractor shall maintain an accurate record of all cases of death, occupational disease, or injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. The Contractor shall promptly furnish the City of Seguin with reports concerning these matters.
- D. The Contractor shall indemnify and save harmless the City of Seguin from any claims for damages resulting from property damage, personal injury and/or death suffered or alleged to have been suffered by any person as a result of any work conducted under this contract.
- E. The Contractor shall provide trench protection for all trenches in an excess of a depth of five (5) feet, in the manner specified in the technical specifications and drawings.
- F. The Contractor shall at all times conduct his work in such a manner as to insure the least possible inconvenience to vehicular and pedestrian traffic. At the close of the work each day, all streets where possible in the opinion of the City of Seguin, shall be opened to the public in order that persons living in the area may have access to their homes or businesses by the use of streets. Barricades, warning signs, and necessary lighting shall be provided to the satisfaction of the City of Seguin at the expense of the Contractor.

#### SANITARY FACILITIES

The Contractor shall furnish, install and maintain ample sanitary facilities for the workmen. As the needs arise, a sufficient number of enclosed temporary toilets shall be conveniently placed as required. Drinking water shall be provided from an approved source, so piped or transported as to keep it safe and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with existing and governing health regulations.

#### **USE OF PREMISES**

A. The Contractor shall confine his equipment, storage of materials, and construction operations to the contract limits as shown on the drawings and as

- prescribed by ordinances or permits, or as may be desired by the City of Seguin, and shall not unreasonably encumber the site or public rights of way with his materials and construction equipment.
- B. The Contractor shall comply with all reasonable instructions of the City of Seguin and all existing state and local regulations regarding signs, advertising, traffic, fires, explosives, danger signals, and barricades.

### REMOVAL OF DEBRIS, CLEANING, ETC.

The Contractor shall, periodically or as directed during the progress of the work, remove and legally dispose of all surplus excavated material and debris, and keep the Project Area and public rights of way reasonably clear. Upon completion of the work, he shall remove all temporary construction facilities, debris and unused materials provided for work, and put the whole site of the work and public rights of way in a neat and clean condition.

### INSPECTION

- A. All materials and workmanship shall be subject to inspection, examination, or test by the City of Seguin and Engineer at any and all times during manufacture or construction and at any and all places where such manufacture or construction occurs. The City of Seguin shall have the right to reject defective material and workmanship or require its correction. Unacceptable workmanship shall be satisfactorily corrected. Rejected material shall be promptly segregated and removed from the Project Area and replaced with material of specified quality without charge. If the Contractor fails to proceed at once with the correction of rejected workmanship or defective material, the City of Seguin may be contract or otherwise have the defects remedied or rejected materials removed from the Project Area and charge the cost of the same against any Monies which may be due the Contractor, without prejudice to any other rights or remedies of the City of Seguin.
- B. The Contractor shall furnish promptly all materials reasonably necessary for any tests, which may be required. All tests by the City of Seguin will be performed in such manner as not to delay the work unnecessarily and will be made in accordance with the provisions of the technical specifications.
- C. The Contractor shall notify the City of Seguin sufficiently in advance of back filling or concealing any facilities to permit proper inspection. If any facilities are concealed without approval or consent of the City of Seguin, the Contractor shall uncover for inspection and recover such facilities at his own expense, when so requested by the City of Seguin.
- D. Should it be considered necessary or advisable by the City of Seguin at any time before final acceptance of the entire work to make an examination of work already completed by uncovering the same, the Contractor shall on

request promptly furnish all necessary facilities, labor, and material. If such work is found to be defective in any important or essential respect, due to fault of the Contractor or his subcontractors, the Contractor shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work if found to meet the requirements of the Contract, the actual cost of labor and material necessarily involved in the examination and replacements, shall be allowed the Contractor and he shall, in addition, if completion of the work of the entire Contract has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.

- E. Inspection of materials and appurtenances to be incorporated in the improvements included in this Contract may be made at the place of production, manufacture or shipment, whenever the quantity justifies it, and such inspection and acceptance, unless otherwise stated in the technical specifications, shall be final, except as regards (1) latent defects, (2) departures from specific requirements of the Contract, (3) damage or loss in transit, or (4) fraud or such gross mistakes as amount to fraud. Subject to the requirements contained in the preceding sentence, the inspection of materials as a whole or in part will be made at the Project Site.
- F. Neither inspection, testing, approval nor acceptance of the work in whole or in part, by the City of Seguin or its agents shall relieve the Contractor or his sureties of full responsibility for materials furnished or work performed not in strict accordance with the Contract.

### REVIEW BY CITY OF SEGUIN

The City of Seguin and its authorized representatives and agents shall have access to and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this Contract, provided, however that all instructions and approval with respect to the work will be given to the Contractor only by the City of Seguin through its authorized representatives or agents.

### FINAL INSPECTION

When the improvements included in this Contract are substantially completed, the Contractor shall notify the City of Seguin in writing that the work will be ready for final inspection on a definite date, which shall be stated in the notice. The City of Seguin will make the arrangements necessary to have final inspection commenced on the date stated in the notice, or as soon thereafter as is practicable.

### DEDUCTION FOR UNCORRECTED WORK

If the City of Seguin deems it not expedient to require the Contractor to correct work not done in accordance with the Contract Documents, an equitable deduction from the Contract Price will be made by agreement between the Contractor and the City of Seguin and subject to settlement, in case of dispute, as herein provided.

#### INSURANCE

The Contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner.

The Vendor will procure and maintain at its expense insurance with insurance companies authorized to do business in the State of Texas, covering all operations under this Agreement, whether performed by the Vendor or its agents, subcontractors or employees. Before commencing the work the Vendor will furnish to the City an original certificate or certificates in a form satisfactory to the City, showing that Vendor has complied with this paragraph.

The Vendor shall not cause any insurance policy to be cancelled or permit it to lapse, and all insurance policies shall include an endorsement to the effect that the insurance policy shall not be subject to cancellation or to a reduction in the required limits of liability or amounts of insurance until notice has been mailed to the City of Seguin, ATTN: Director of Finance, P.O. Box 591, Seguin, TX 78156-0591. The notice shall state the date when such cancellation or reduction shall be effective. The cancellation date shall not be less than thirty (30) days after such notice.

Commercial general liability and motor vehicle insurance will be written with the City as an additional insured and will be endorsed to provide a waiver of the carrier's right of subrogation against the City. The types and amounts of insurance required are set forth below:

ТҮРЕ	AMOUNTS
1. Workers' Compensation	Statutory
2. Commercial General Liability Insurance to include coverage for the following:  a. Premises/Operations b. Independent Contractors c. Products/Completed Operations d. Personal Injury e. Contractual Liability	\$1,000,000 combined single limits
<ul><li>3. Business Automobile Liability</li><li>a. Owned/leased vehicles</li><li>b. Non-owned vehicles</li><li>c. Hired Vehicles</li></ul>	Combined Single Limit for Bodily Injury and Property Damage of \$500,000 per occurrence

The stated limits of insurance are minimum only. They do not limit the Vendor's indemnity obligation, and it will be the Vendor's responsibility to determine what limits are adequate. These limits may be met by basic policy limits or any combination of basic limits and umbrella limits. The City's acceptance of certificates

of insurance that do not comply with these requirements in any respect does not release the Vendor from compliance with these requirements.

The Vendor will indemnify, hold harmless and defend the City and its employees, agents, officers and servants from any and all lawsuits, claims, demands and causes of action of any kind arising from the negligent or intentional acts errors or omissions of the Vendor, its officers, employees or agents. This will include, but not be limited to, the amounts of judgments, penalties, interest, court costs, reasonable legal fees, and all other expenses incurred by the City arising in favor of any party, including the amounts of any damages or awards resulting from claims demands and causes of action for personal injuries, death or damages to property alleged or actual infringement of patents, copyrights, and trademarks and without limitation by enumeration, all other claims, demands, or causes of action of every character occurring, resulting, or arising from any negligent or intentional wrongful act, error or omission of the Vendor or its agents or employees. This obligation by the Vendor will not be limited by reason of the specification of any particular insurance coverage required under this Agreement.

### WORKERS' COMPENSATION INSURANCE

Pursuant to the requirements set forth in Title 28, Section 110.110 of the Texas Administrative Code, the Contractor, all employees of the Contractor, all employees of any and all subcontractors, and all other persons providing services on the Project must be covered by a workers' compensation insurance policy: either directly through their employer's policy (the Contractor's or subcontractor's policy) or through an executed coverage agreement on an approved TWCC form. Accordingly, if a subcontractor does not have his or her own policy and a coverage agreement is used, contractors and subcontractors must use that portion of the form whereby the hiring contractor agrees to provide coverage to the employees of the subcontractor. The portion of the form that would otherwise allow them not to provide coverage for the employees of an independent contractor may not be used.

The worker's compensation insurance shall include the following terms:

- (a) Employer's Liability limits of \$100,000.00 for each accident are required.
- (b) Texas Waiver of Our Right to Recover From Others Endorsement, WC 42 03 04" shall be included in this policy.
- (c) Texas must appear in Item 3A of the Worker's Compensation coverage or Item 3C must contain the following: All States except those listed in Item 3A and the States of NV, ND, OH, WA, WV, and WY.

Pursuant to the explicit terms of Title 28, Section 110.110(c) (7) of the Texas Administrative Code, the bid specifications, this Contract, and all subcontracts on this Project must include the following terms and conditions in the following

language, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standards of documentation:

# "A. Definitions:

<u>Certificate of coverage ("certificate")</u> - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Texas Workers' Compensation Commission, or a coverage agreement (TWCC-81, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

<u>Duration of the project</u> - includes the time from the beginning of the work on the project until the Contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractors" in § 406.096 [of the Texas Labor Code]) - includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent Contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- B. The Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, that meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the Contractor providing services on the project, for the duration of the project.
- C. The Contractor must provide a certificate of coverage to the governmental entity **prior** to being awarded the contract.
- D. If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- E. The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
- (1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

- (2) no later than seven calendar days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- F. The Contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- G. The Contractor shall notify the governmental entity in writing by certified mail or personal

Delivery, within 10 calendar days after the Contractor knew or should have known, or any change that materially affects the provision of coverage of any person providing services on the project.

- H. The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The Contractor shall contractually require each person with whom it contracts to provide services on a project, to:
- (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, that meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
- (2) provide to the Contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided f or all employees of the person providing services on the project, for the duration of the project;
- (3) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (4) obtain from each other person with whom it contracts, and provide to the Contractor:
- (a) a certificate of coverage, prior to the other person beginning work on the project; and
- (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

- (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (6) notify the governmental entity in writing by certified mail or personal delivery, within 10 calendar days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
- (7) contractually require each person with whom it contracts, to perform as required by paragraphs (a) (g), with the certificates of coverage to be provided to the person for whom they are providing services.
- J. By signing this contract, or providing, or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the Contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the Commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

K. The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor that entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten calendar days after receipt of notice of breach from the governmental entity."

# WARRANTY OF WORKMANSHIP AND MATERIALS

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the improvements included in this Contract by the City of Seguin or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of 12 months from the date of final acceptance of the work.

# COMPLIANCE WITH AIR AND WATER ACTS

In compliance with the Clean Air Act, as amended, 41 U.S.C. Sec. 7401 et. seq., and the regulations of the Environmental Protection Agency with respect thereto, the Contractor agrees that:

- 1. Any facility to be utilized in the performance of this contract or any subcontract shall not be a facility listed on the EPA List of Violating Facilities pursuant to 40 CFR 15.20.
- 2. He will comply with all requirements of Section 114 of the Clean Air Act, as amended.

### EQUAL EMPLOYMENT OPPORTUNITY

- A. The Contractor will not discriminate against any employee or the applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, promotion, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms or compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Owner.
- B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- C. The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this contract so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.
- D. The Contractor shall take affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions.
- E. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts.
- F. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents.

### AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS

The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise threat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, promotion, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

### NON SEGREGATED FACILITIES

The Contractor certifies that he does not and will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not and will not permit his employees any segregated facilities at any of his establishments, or permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. As used in this paragraph the term "segregated facilities" means any waiting rooms, work areas, rest rooms and washrooms, restaurants and other eating areas, time clocks, locker room and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise.

### JOB OFFICES

- A. The Contractor and his subcontractors may maintain such office and storage facilities on the site as are necessary for the proper conduct of the work. These shall be located so as to cause no interference to any work to be performed on the site. The City of Seguin shall be consulted with regard to locations.
- B. Upon completion of the improvements, or as directed by the City of Seguin, the Contractors shall remove all such temporary structures and facilities from the site, and leave the site of the work in the condition required by the Contract.

# PARTIAL USE OF SITE IMPROVEMENTS

The City of Seguin may give notice to the Contractor and place in use those sections of the improvements which have been completed, inspected and can be accepted as complying with the technical specifications and if in its opinion, each such section is reasonably safe, fit, and convenient for the use and accommodation for which it was intended, provided:

A. The use of such sections of the improvements shall in no way impede the completion of the remainder of the work by the Contractor.

- B. The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.
- C. The period of guarantee stipulated in the Section 132 hereof shall not begin to run until the date of the final acceptance of all work which the Contractor is required to construct under this Contract.

### CONTRACT DOCUMENTS AND DRAWINGS

The City of Seguin will furnish the Contractor without charge 2 copies of the Contract Documents, including Technical Specifications and Drawings. Additional copies requested by the Contractor will be furnished at cost.

### CONTRACT PERIOD

The work to be performed under this contract shall commence within the time stipulated by the City of Seguin in the Notice to Proceed, and shall be fully completed within 180 calendar days thereafter.

# LIQUIDATED DAMAGES

Failure to Complete on Time-The time of completion is the essence of the contract. For each calendar day that any work shall remain uncompleted after the time specified in the proposal and the contract, or the increased time granted by the Owner, or as automatically increased by additional work or materials ordered after the contract is signed, the sum per day given in the following schedule will not be deducted from the monies due the Contractor, not as a penalty but as liquidated damages.

AMOUNT OF CONTRACT	AMOUNT OF LIQUIDATED DAMAGES PER DAY		
Less than \$500,000	\$ 250.00		
\$500,000 to \$750,000	\$ 300.00		
\$750,000 to \$1,000,000	\$ 400.00		
Over \$1,000,000	\$ 500.00		

This sum of money thus deducted for such delay, failure or non-completion is not to be considered as a penalty, but it shall be deemed, taken and treated as reasonable liquidated damages, since it would be impractical and extremely difficult to fix the actual damages and the Owner may withhold from the Contractor's compensation such sum as liquidated damages.

### SPECIAL CONDITIONS

- SC-1.0 <u>Texas Department of Transportation</u>. The Contractor shall complete construction work within any right-of-way of the Texas Department of Transportation in accordance with the requirements and regulations established by the Texas Department of Transportation (TxDOT) and Appendix No. 2, <u>PLACING WATER</u>, <u>SEWER</u>, <u>GAS AND OIL LINES</u>, <u>AND CONDUIT WITHIN THE RIGHTS-OF-WAY OR CROSSING STATE AND U.S. HIGHWAYS</u>, and the City of Seguin.
- SC-2.0 <u>Existing Utilities</u>. The Contactor's attention is hereby specifically directed to information regarding the existing utility structures, lines and mains which are known to exist and which may be encountered within and adjacent to the limits of the work covered by this Contract. The existence and location of underground utilities indicated on the Plans are taken from the best records available and are not guaranteed; therefore investigation and verification by the Contractor shall be required before starting work.

The Contractor shall be held responsible for the maintenance and protection of existing utilities as well as all damage which may occur as a result of construction operations. The cost of temporarily relocating utilities for the convenience of the Contractor shall be paid by the Contractor.

It shall be the Contractor's responsibility to determine the exact location of existing utilities which cross proposed construction. It shall be the Contractor's responsibility to excavate over, under and around the utility facilities and if necessary to provide temporary bridging during construction so as to maintain continuous service. It shall also be the Contractor's responsibility to backfill around the utility facility and to complete construction in a manner such as to leave the utility facility firmly and securely bedded in its original position.

Where overhead power lines are in close proximity to water and sewer main installation operations, the Contractor shall comply with the requirements established by Vernon's Texas Civil Statutes Articles 1463c.

In areas where existing utilities within and adjacent to the established limits of work could be damaged as a result of soil movement, the Contractor shall take all precautions to protect such utilities from damage. Further should it occur, the Contractor shall be fully responsible and shall pay for the repair of any such damage without additional cost to the Owner.

SC-3.0 Protection of Lives and Health. The Contractor shall comply with the U.S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (Public Law 91-596 and all subsequent amendments) and under section 107 of the Contract Work Hours and Safety Standards Act (Public Law 91-54 and all subsequent amendments).

The Contractor shall have a competent person or persons, as required under the Occupational Safety and Health Act, on the site to inspect the work and to supervise the conformance of the Contractor's operations with the regulation of the Act.

This project is subject to all the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974 and CFR 29, Part 1910 and all subsequent amendments, General Industry Safety and Health Regulations Identified as Applicable to the Construction. Contractors are urged to become familiar with the requirements of these regulations.

- SC-4.0 <u>Tree Mitigation/Protection Plans</u>. The Contractor shall construct work as to mitigate/protect existing trees within project limits. The Contractor will perform all such work at no separate pay.
- SC-5.0 <u>Shrubs and Landscaping</u>. The Contractor shall restore to its original condition or better, all existing shrubs and landscape disturbed during construction. The Contractor shall perform this item of work at no separate pay.
- SC-6.0 <u>Permits</u>. Contractor is responsible to obtain all necessary permits to accomplish the Work described within these documents. It is the Contractor's responsibility to coordinate with the City, County, TxDOT, TCEQ, and any other pertinent agencies needed in order to determine all requirements and to meet such requirements.

It is the Contractor's responsibility to coordinate with the Owner in order to determine all requirements and to meet such requirements.

- SC-7.0 Resident and Property Owner Notification. Once the work begins it shall be constructed and completed in the shortest time possible to minimize inconvenience to property owners. Contractor shall assure that all affected property owners are notified between 72 hours and 2 weeks before work begins on their street/alley/easement. The Contractor shall provide property owners the minimum following information; work to be performed, starting and ending dates, and name and number of person to be contacted for questions. Written notices shall be approved by Engineer prior to distribution.
- SC-8.0 <u>Driveway Disturbance</u>. Residents and property owners shall be notified, the Contractor, between 72 hours and 2 weeks in advance of disturbance of driveways. Notice to property owners shall follow the procedure as stated in the previous item. <u>Driveways that are open cut shall be reconstructed as soon as possible to minimize inconvenience to the property owners</u>. The materials used for the replacement of the driveways shall be as shown on the plans and in all cases shall be equal to or better than the existing material. In the event an excavation at a driveway must be left open overnight, the excavation shall be covered and temporary access to the property shall be provided. <u>Anchored steel sheeting, bridges, temporary driveway or other substantial structure shall be used to provide temporary access to the property.</u>

SC-9.0 <u>Incidental Construction Items</u>. All items called out on the construction drawings or within the specifications which are not itemized in the bid proposal section of these documents shall be considered incidental to the cost of the project.

SC-10.0 All claims for extension of time shall be made in writing to the Owner no more than ten days after the occurrence of the delay or after the cause of the delay has become apparent; otherwise they shall be waived. In the case of the continuing cause of delay, only one claim is necessary. Any request for an extension of time shall be accompanied by a revised construction schedule which, if approved by the Owner, shall become the Contractor's construction schedule.

When the Contract is on a calendar day basis, no extension of time shall be allowed for adverse weather conditions reasonably anticipatable from historical weather data, and such weather conditions shall not be deemed a casualty beyond the Contractor's control. The Contractor may be granted an extension of time because of unusual inclement weather which is beyond the normal weather recorded. Listed as follows are the mean number of days in which there occurred 0.01 inch or more of precipitation for Guadalupe County:

January	8	February	7	March	8	April	7
May	8	June	7	July	4	August	5
September	7	October	6	November	7	December	8

Rain days per month in amounts exceeding the number of days shown above may be credited as a "Rain Day" if a claim is made in accordance with the Contract Documents. A "Rain Day" is any day in which a rain event occurs at the site and is sufficient to prevent the Contractor from performing work critical to maintaining the project schedule.

SC-11.0 Certified flagmen may be used on the project at certain times in the project. However, there may be situations that would require uniformed officers for traffic control. The Contractor is responsible for identifying such situations and utilizing uniformed officers for such situations. The Contractor is responsible for maintain safe traffic control at the job sites at all times. The Contractor must utilize uniformed officers for traffic control, in TxDOT right of way, school vicinity, major thoroughfares and other areas designated by the Owner at no additional cost to the project. Uniformed police officers shall be off-duty Seguin Police officers as a first priority and Guadalupe County Sheriff officers as a second option. In the event neither Seguin nor Guadalupe County police officers are available then the Contractor shall provide documentation and justification for the use of other peace officers. The Owner reserves the right to request the Contractor to utilize uniformed officers at any location throughout the project.

A certified flagman must be formally trained in traffic control procedures. Certified flagmen must wear bright-colored vests and be equipped with appropriate flagging and communication

devices while on the work site. They must also have in their possession while on duty a proof of training identification issued by a certified institute.

- SC-12.0 The Contractor shall provide a minimum of 72 hours' notice in writing to the Owner and the Engineer and the project's on-site representative of any testing. The Contractor shall document the test results and provide a copy to the Owner and the Engineer. All testing procedures shall conform to the specifications and standards of the Owner. The Contractor shall keep in daily contact with the on-site representative through completion of the project and shall have a superintendent on the job site who can communicate in English with the on-site representative at all times.
- SC-13.0 The Contractor is responsible for addressing all complaints from citizens and commercial property owners caused due to the performance of his work. The Contractor shall address all complaints in a timely manner. The Contractor shall submit to the Engineer within seven (7) days of resolution of complaint a letter from the citizen or the commercial property owner acknowledging the complaints have been addressed and the repair work has been completed by the Contractor to his/her satisfaction.
- SC 14.0 <u>Signs</u>. The Contractor shall remove and replace all signs disturbed during construction per COSA Item 531. This item of work shall be considered incidental to the project and will not be paid for separately.

### SECTION W

# WATER MAIN CONSTRUCTION

# W.1. SCOPE

These specifications for construction of water mains are intended to be so written that only first class workmanship and finish of the best grade and quality will result. The fact that the following specifications may fail to be so complete as to cover all details will not relieve the Contractor of full responsibility for providing a complete project of high quality, first class finish and appearance and satisfactory for operation.

The Contractor shall furnish all materials, labor, and equipment for constructing the work included in these specifications and as detailed on the plans.

# W.2. <u>PROTECTION OF WORK</u>

When construction is stopped temporarily and at the end of the day's work, tight fitting stoppers or bulkheads shall be securely placed in or across the ends of all pipes.

The Contractor will be held responsible for the care of all work until final completion and acceptance, and he will be required to make good, at his own expense, any damage or injury it may sustain for any cause. He shall assume all risks from floods and casualties of every description and make no charge for damages from such cause.

# W.3.1. <u>MATERIALS</u>

The Contractor shall furnish and place materials meeting the requirements of these specifications, of the dimensions and types at the locations and elevations shown on the plans or established by the Engineer. All materials shall be approved by the Engineer before being installed and any of these materials placed before they are so approved shall be removed and replaced with approved materials.

# W.3.2. STORAGE OF MATERIALS

Materials delivered to the site of the work prior to their use shall be stored so as to cause the least inconvenience to the public, and in a manner satisfactory to the Engineer.

Materials that will deteriorate such as cement and mortar shall be stored in weather-tight buildings.

# W.3.3. <u>DESIGN PRESSURES</u>

Pipe and fittings for water lines shall be designed to withstand minimum internal working pressures of two hundred thirty-five (235) pounds per square inch unless otherwise noted on the plans or in the bid proposal.

# W.4.1. TRENCHING AND BACKFILL FOR WATER MAIN CONSTRUCTION

This item consists of excavating all necessary trenches for the water main and system construction and backfilling after the pipe has been properly laid, inspected, and tested.

This work shall include the furnishing of all labor, materials, tools, equipment, and machinery necessary for clearing and removing from the site of the work, wherever located, all obstructions, trees, stumps, brush, vegetation and debris, and all earth, rock, and other materials to be excavated; the removal of existing structures except where specifically paid for as separate contract pay items; the stripping or removal of top soil or sod to be piled separately from other excavated materials and later to be restored to its original place after backfilling is completed; the furnishing, placing, and maintaining of all sheeting, shoring and bracing necessary to protect the work and adjacent properties, all pumping, bailing, and draining necessary to keep the excavation free from seepage water, water from sewers, drains, ditches, creeks, and other sources; provision for the uninterrupted flow of sewers and surface waters during progress of the construction; the removal, after completion of the work, of all sheeting, shoring, and bracing not necessary to support the sides of the excavation; the satisfactory disposal of excess and unsuitable materials not required or which cannot be used for backfilling, tamping, compacting, and refilling after settlement of all excavated areas; the restoring of all streets, alleys, fences, rights-of-way, and other lands or structures, private or public, damaged or occupied by the Contractor in the performance of the contract, to as good a condition as they were prior to the beginning of the work.

# W.4.1.a. CLASSIFICATION

Excavation in trenches for water line construction will be unclassified and will not be paid for separately but shall be included in the price bid per linear foot for the various sizes of pipe unless specific provision for separate payment is called for in the Special Provisions and on the Proposal Form.

# W.4.2. <u>CONSTRUCTION METHODS</u>

Trenches shall be excavated by trenching machine, backhoe or dragline, except in locations where hand trenching is required. The banks of trenches shall be vertical, to a point one (1) foot above the top of the pipe.

Trenches will be excavated to the lines and grades laid out by the Engineer or as shown on the plans. No change in locations of the lines is contemplated, but should any changes be made in the lines not materially altering the amount of character of the trenching to be done, the Contractor shall proceed with the changed alignment at the unit bid price. In case any change involves greater construction difficulties than the original alignment, the Owner and the Engineer

will agree with the Contractor for extra compensation therefor, prior to the construction of the changed line or lines.

The width of the trench shall be six (6) inches minimum and eight (8) inches maximum on each side of the pipe bell.

Trenches for water pipe shall be of such depth as to provide a minimum of 42" of cover unless otherwise shown on the plans.

The excavation shall not advance more than three hundred (300) feet ahead of the completed and backfilled pipe line. Pipe shall be laid in all trench that has been opened at the end of each day's work, unless the Contractor secures written permission to do otherwise from the Engineer.

If the bottom of the trench becomes an unstable foundation for the pipe through the neglect of the Contractor to adequately shore or dewater, the Contractor will be required to remove the unstable material and backfill the trench to the proper grade with approved compacted gravel, and no extra compensation will be granted for this material or work.

Also, if the trench is inadvertently excavated deeper than necessary it shall be backfilled to the proper grade with approved compacted gravel at the Contractor's expense.

However, if the undisturbed material encountered at the grade depth constitutes, in the opinion of the Engineer, an unstable foundation for the pipe, the Contractor will be required to remove such unstable material and backfill the trench to the proper grade with approved compacted material.

The Contractor shall excavate all trenches, including work necessary in working around existing pipe lines or other obstructions. The Contractor shall give notice to the Owners of any such lines or obstructions in order that they may have time to take the necessary precautions for protecting their property. The Contractor shall be responsible for protecting the Owner from any damage from his operations in such work.

In rock, excavation shall be carried three (3) inches below the bottom of the pipe, and loose earth or gravel, thoroughly tamped, shall be used for backfilling to the grade of the bottom of the pipe line.

After inspection of pipe lines has been finished on any completed portion of the work the trench may be backfilled. Backfilling shall be accomplished in compliance with the applicable portions of these specifications.

### W.4.3. SHEETING, SHORING, AND BRACING

The sides of all excavations shall be sheeted, shored, and braced as deemed necessary by the Contractor so as to try to prevent slides, cave-ins, settlement, or movement of the banks and to maintain the excavation clear of obstructions that will in any way hinder or delay the progress of the work. In wet, saturated, or flowing materials, when it is necessary to install tight sheeting or cofferdams, wood or steel sheet piling of a design and type approved by

the Engineer shall be used. All sheet piling, shoring and bracing shall have sufficient strength and rigidity to withstand the pressure exerted and maintain the sides of the excavation properly in place and protect all persons or property from injury or damage. When excavations are made adjacent to existing building or other structures or in paved streets, particular care should be taken to adequately sheet, shore, and brace the sides of the excavation to prevent undermining of, or settlement beneath, the structures or pavement. Underpinning of adjacent structures or payement shall be done by the Contractor at his own cost and expense in a manner satisfactory to the Engineer and when required by the Engineer. The pavement shall be removed, the void satisfactorily refilled and compacted, and the pavement replaced by the Contractor; the entire expense of such removal and subsequent replacement thereof shall be borne by the Contractor. Sheeting, shoring and bracing shall not be left in place unless otherwise provided for in the contract or authorized by the Engineer. The removal of sheeting, shoring, and bracing shall be done in such manner as not to endanger or damage either new or existing structures, private or public properties, and so as to avoid cave-ins or sliding of the banks. All holes or voids left by the removal of the sheeting, shoring, or bracing shall be immediately and completely filled and compacted with suitable materials. Sheeting, shoring, and bracing ordered left in place by the Engineer will be paid for at the unit price bid for this item, when such pay item is provided. In the event no separate pay item is provided, then the cost of sheeting, shoring and bracing is to be included in such items as are provided.

### W.4.4. PUMPING, BAILING AND DRAINING

The Contractor shall immediately remove all surface or seepage water from sewers, drains, ditches, and other sources which may accumulate during the excavation and construction work by providing the necessary underdrains or otherwise and by doing the necessary pumping, bailing or draining. The Contractor shall have available at all times sufficient equipment in proper working order for doing the work herein required. All water removed from excavations shall be disposed of in an approved manner so as not to create unsanitary conditions nor to interfere unduly with the use of streets, private driveways, or entrances. Pumping, bailing, draining, underdrains, ditches, etc., shall be considered as incidental work and will not be bid for as separate items but their cost shall be included in the contract prices bid in the Proposal for the various units of measure.

# W.4.5. SUPPORT OF EXISTING PIPES ACROSS TRENCH

It shall be the responsibility of the Contractor to protect and support all water, sewer, gas, and other conduits crossed by the excavation or work to be performed by him or to arrange for their temporary removal and subsequent replacement. All expense incidental to this phase of the work shall be borne by the Contractor.

# W.4.6. DISPOSAL OF EXCAVATED MATERIALS

Excavated materials, so far as needed and of a suitable character, shall be piled adjacent to the work to be used for backfilling as required. Excavated materials unsuitable for the backfilling or in excess of that required for backfilling shall be disposed of in an approved manner at locations designated on the plans or approved by the Engineer. Desirable top soil, sod, etc. shall be carefully piled separately and replaced in its original position when required. Excavated materials shall be handled at all times in such a manner as to cause a minimum of

inconvenience to public travel and to permit safe and convenient access to private and public property adjacent to or along the line of the work. In parkways and easements where it is necessary to deposit excavated materials on lawns during the work, burlap or canvas shall be placed on the lawn to prevent contact between excavated materials and the lawn.

# W.4.7. PROTECTION OF TREES, PLANTS, SHRUBBERY, ETC.

Where trees, plants, shrubbery, etc., are adjacent to the line of the work and are not to be removed or removed and replaced, the Contractor shall protect such trees, plants, shrubbery, etc., by substantial wooden boxes and guards and shall not permit machinery or employees to scrape, tear the limbs from or damage or attach guy cables to them and if, in the opinion of the Engineer, such trees, plants, shrubbery, etc. would be damaged by machinery, etc., hand excavation may be required. The Contractor shall be responsible for all damages to adjacent trees, plants, shrubbery, etc.

# W.4.8. <u>USE OF EXPLOSIVES</u>

Should the Contractor elect to use explosives in the prosecution of the work, they shall be used with utmost precaution, and no blasting shall be done within 50 feet of the completed work or exposed pipes, conduits, etc. He shall assume all liability for any injury or damage to persons or property resulting from such usage. All necessary precautions shall be taken by the Contractor, and provisions shall be made for the protection of the new work; all blasting shall be so conducted as not to endanger persons or property. Only a sufficient quantity of explosives for the immediate day's work shall be kept at the site of the work by the Contractor. Caps, detonators and explosives shall be stored separately. The Contractor shall be responsible for, and shall make good, any damage caused by blasting or accidental explosions.

# W.4.9. JACKING, BORING OR TUNNELING

Tunnelling under highways, streets or railroads, when required and shown on the plans, shall be accomplished by means of jacking, boring or tunnelling equipment which has been approved by the Engineer prior to starting tunnelling operations. Tunnels shall be backfilled as completely as practicable with selected materials and compacted by means of mechanical tampers. The remainder of the tunnel backfill shall be of coarse sand, gravel or crushed rock hydraulically placed in such manner that no voids remain between the backfilled material and the roof of the tunnel.

# W.4.10. PROTECTION OF BUILDINGS

The Contractor shall, at his own expense, shore up and otherwise protect any building or other structure which may, in the opinion of the Engineer, be endangered during the work, and he shall restore all buildings, culverts, fences, walls, or other properties disturbed during his work to a condition similar or equal to that existing before his operations.

The Contractor shall be responsible for any injuries to persons and property, for all damages to any pipe, conduit, sewer, or other structures injuriously affected by the work. The Owner shall not be liable therefore.

### W.4.11. CROSSINGS TO BE KEPT OPEN

At such street, railroad, and all other crossings as may be designated by the Engineer, the trenches are to be filled in such a manner as to prevent any serious interruption of traffic upon the roadway or sidewalks. The cost thereof shall be borne by the Contractor.

# W.4.12. PROTECTION OF UNFINISHED WORK

Before leaving work for the night, during a storm, or at other times, care must be taken to protect and securely close the unfinished end of the pipe. Any earth or other materials that may find entrance into the pipe through any such open or unplugged end of the pipe must be removed at the Contractor's expense.

### W.4.13. LIGHTS AND GUARDS

The Contractor must provide and maintain adequate detours around the work under construction. The Contractor shall provide lights, warning signs, and/or watchmen to provide adequately for the safety of the public.

### W.4.14. BACKFILL

Excavation shall be backfilled only with approved materials. The placing of backfill material shall not begin until approval has been given by the Engineer and shall be done immediately when so ordered by the Engineer.

Backfilling shall be brought up to an elevation slightly above the original ground level to allow for subsequent settlement. The top surface or slopes of all backfill shall be neatly graded off in a workmanlike manner, and where select topsoil, sod, or other material is removed and piled separately, such material shall be carefully replaced in a manner satisfactory to the Engineer.

# W.4.14.1. BACKFILL MATERIAL

Backfilling shall be done with good sound earth. Broken concrete, rock, bituminous pavement, or other lumpy material shall not be used in the backfill except as the lumps are small and their dispersal in the backfill is made in the upper section in a manner satisfactory to the Engineer. Materials of a perishable, spongy, or otherwise improper nature shall not be used in backfilling. Where good sound earth is not available from the excavated material, pea gravel cushion and/or sand and granular backfill material will be used for the initial backfill operation to a point six (6") inches above the top of the pipe. Gravel cushion and/or granular backfill material will not be required when concrete encasement is specified or used around the pipe. No backfill shall be made until it is authorized by the Engineer. All debris shall be removed. Sheeting, shoring and bracing shall be pulled and removed during the progress of the backfilling in a manner satisfactory to the Engineer.

### W.4.14.2. CONCRETE ENCASEMENT

Concrete encasement, when required, shall be composed of a free flowing material consisting of small stone, pea gravel, limestone chat, or pit run sand and gravel and shall always consist of at least sixty (60) percent sand. The material shall all pass a three-quarter (3/4) inch screen and be free from sticks, lumps, stones, and organic matter. The material shall be mixed with Portland Cement in the proportions of one (1) part cement to ten (10) parts of the above described granular material, by volume measurement. Concrete encasement shall be poured either wet or dry as may be directed by the Engineer.

When concrete encasement backfill material is specified or ordered by the Engineer to be poured <u>DRY</u>, the Contractor shall place this material on each side of the pipe for the full width of the trench using shovels to cut the material back under the pipe and shall be tamped to a height of six (6") inches above the pipe to receive final backfill. Care must be exercised not to dislocate or disturb the grade and alignment of the pipe. If ordered by the Engineer to be poured <u>WET</u>, caution and care must be used not to float the pipe out of place. In the event pipes are floated out of proper position they shall be removed and relaid at the expense of the Contractor.

### W.4.14.3. GRAVEL CUSHION OR BACKFILL

On water line construction when, in the opinion of the Engineer, the subgrade material encountered at grade is soft, spongy, and unsuitable, it shall be removed to such a depth that the replacement thereof with firmly tamped gravel or crushed stone will provide an unyielding, stable foundation. The gravel used in cushion or backfill shall be pit run gravel or crushed stone and shall be free from silt, loam, or vegetable matter and shall be of a gradation suitable to the Engineer.

Gravel cushion or backfill, when required by the plans or the Engineer, will be paid for at the contract unit price and shall be the total compensation for furnishing all labor materials, tools, and equipment for performing this particular phase of work.

Subgrades that have been allowed to become unstable by neglect of the Contractor, by improper drainage or lack of drainage, and when in the opinion of the Engineer, the condition was caused by the neglect or fault of the Contractor, the Engineer shall order the Contractor to remove the unstable subgrade and replace the same with gravel at the expense of the Contractor, and no extra compensation will be allowed.

### W.4.14.4. CEMENT STABILIZED BACKFILL

Where backfill material shown or called for on the plans to be used in the pipe zone is cement stabilized sand, the material shall extend from a point six (6") inches below the pipe to a point six (6") inches above the top of the pipe. The backfill material shall be deposited simultaneously on both sides of the pipe and worked carefully around and under the pipe with the point of a shovel. Payment for this bedding material shall be included in the unit price bid per linear foot of cement stabilized backfill material. Cement stabilized backfill shall contain a minimum of one (1) sack mix (per yard of pit run sand).

# W.4.15. INITIAL BACKFILL

After the pipe has been laid the pipe lines shall be backfilled as follows:

Good sound earth, free of clods or lumps exceeding three (3") inches in any dimension, from the spoil bank shall be brought up by hand backfilling equally on each side of the pipe to a height of six (6") inches over the top of the pipe. To insure a good firm bedding the backfill shall be cut under and around the pipe with shovels up to the spring line of the pipe. This backfill shall be done so as not to displace the pipe from its original position.

In summation, initial backfill will be composed of one or more of the following in the manner described above:

- 1. Good sound earth free of lumps or clods in dimension not exceeding three (3") inches shall be brought up six (6") inches over the top of the pipe.
- 2. Gravel cushion, when shown on the plans, shall be poured into place to the top of the pipe lines. Gravel cushion is defined as a free flowing material like sand or mixed sand and pea gravel, free from lumps, large stone, clay and organic material. When wet, the material shall not form mud or muck.
- 3. 2,500 pound concrete poured and rodded into place six (6") inches over top of the pipe and all around the pipe a minimum of six (6") inches thickness as shown on the plans as concrete encasement or as required by the Engineer.

# W.4.16. FINAL BACKFILL

The final backfilling operation shall be one of the following for any of the methods used in the initial backfill procedure:

- 1. The remainder of the backfill material may be made from the spoil bank, free from clods or lumps exceeding 6" in any dimension, placed in uniformly compacted layers not exceeding one (1') foot in loose depth and hand or mechanically tamped in a manner approved by the Engineer.
- 2. The backfill material may be placed loosely in the trench, rounded up over the trench slightly above the original ground elevation without tamping and the trench jetted with water until all settlement has ceased. In open rights-of-way the trench may be left crowned above the original ground as directed by the Engineer. Except in cases where pipe lines cross open field, surplus soil is in such excess that drainage and/or adjacent property may be affected, the surplus material shall be removed from the site as directed by the Engineer.
- 3. Where an asphalt existing street or driveway surface has been cut (all asphalt and concrete pavements shall be saw cut before excavation), the following procedure is to be used in backfilling and replacing the pavement (unless otherwise shown on the plans):

- A. The top 24" of the trench shall be filled with gravel aggregate, consisting of hard durable uncoated pebbles or stone particles mixed with sand, free from clay lumps, shales, salt or alkali, well graded from coarse, not to exceed 3", to fine with 55% retained on 1/4" screen or washed gravel will be poured and compacted into place taking care not to disturb the pipe to level with the finished surface.
- B. In not less than fourteen (14) days after backfill of the pavement cut is completed, unless otherwise approved by the Engineer, the Contractor shall remove the gravel backfill to one and one-half (1 1/2") inches below the pavement surface and furnish and place fine graded surface course hot mix asphaltic concrete, which when compacted will be not less than one and one-half (1 1/2") inches thick.
- 4. Where concrete pavement is cut, the pavement shall be cut by sawing six (6") inches beyond trench width on each side of the ditch and breaking out the concrete. The reinforcing steel shall be cut and bent back to be replaced after pipe laying operation has been completed. The ditch shall be backfilled from around the pipe and over the pipe to the pavement surface with pit run gravel or washed gravel jetted into place as in paragraph 3 (A) above. In not less than five (5) days after the backfill of pavement cut is completed, the Contractor shall remove gravel backfill to six (6") inches below the surface of the pavement and shall pour a six (6") inch thick 3,000 psi concrete slab the width of the paving cut.

Prior to completion and final acceptance of the entire job, the Contractor will be required to refill and recrown all trenches which have settled below ground level or where the crown is reduced to indicate that such subsidence will occur.

# W.5.1. FLANGED CAST IRON PIPE AND FITTINGS

All flanged end, flange and bell, and flange and spigot pipe and fittings shall meet ANSI/AWWA Specifications as outlined below and shall have American Standard Class 125 flanges. Bolts, bolt circles, heads and nuts shall be standard as to quantity of material. Gaskets shall be made from the best quality insertion rubber 1/16 inch thick. Flanged fittings shall be American Standard Class 125, except where noted on the plans.

# W.5.2. <u>FITTINGS</u>

Fittings shall conform to ANSI/AWWA - C110/A21.10 and ANSI/AWWA - C111/A21.11 standards.

All fittings shall be cement lined according to ANSI/AWWA - C104/A21.4. Fittings may be gray or ductile iron.

# W.5.3. <u>DUCTILE IRON PIPE</u>

Ductile iron pipe for water line construction shall be as described in Section DIP – DUCTILE IRON PIPE AND FITTINGS of these specifications.

# W.5.4. PVC PIPE

This specification designates general requirements for polyvinyl chloride pipe with integral thickened wall bells used primarily for conveying potable water under pressure.

All pipe furnished shall meet the requirements of AWWA C-900 or latest revisions thereof. PVC pipe must have a dimension ratio (DR) as shown on the plans or noted in special provision with outside diameters equivalent to cast iron pipe. All pipe furnished shall have a pressure class rating as shown on the plans or noted in special provisions at 73.4° F, and shall bear the National Sanitation Foundation Seal of approval for potable water pipe. Provisions shall be made for contraction and expansion at each joint with a rubber ring type gasket in a thickened bell as part of each joint, or a separate double bell coupling. All joints shall be made using a non-toxic lubricant in accordance with manufacturer's recommendations.

# W.5.5. REINFORCED CONCRETE WATER PIPE STEEL CYLINDER TYPE PRETENSIONED REINFORCEMENT: (Steel Cylinder Type)

Concrete cylinder pipe, modified prestressed (or pretensioned reinforcement) when required, as shown on the plans, shall consist of a welded sheet steel cylinder lined with a dense concrete lining and around which there is placed reinforcing bars wound helically under measured tension, with a dense concrete coating covering the cylinder and the bars, and with steel joint rings of the bell and spigot type for rubber gasket. Pipe shall be in approximately thirty-two (32') foot nominal lengths except for shorter lengths as required by special conditions. The pipe and pipe fittings shall comply with the Federal Specifications SS-P-381 entitled Pipe; Pressure, Reinforced Concrete Pretensioned Reinforcement (Steel Cylinder Type) with such modifications as set forth herein.

The pipe manufacturer shall have had a successful experience record in the design and manufacture of concrete cylinder pipe and shall have had a substantial footage of pipe of similar size and with the same joint as offered for this project in successful operation for at least five (5) years.

All pipe and fittings shall have the approval of the Underwriter's Laboratories, Inc.

All pipe shall be Class 150 (designed for a working pressure of 150 pounds per square inch) unless otherwise noted on the plans or in the Special Provisions.

The steel cylinders shall be fabricated from hot-rolled carbon steel sheets or plates. Sheets shall conform to the requirements of the current ASTM Designation A.245, Grade B or C or ASTM Designation A.415, Commercial Grade, except that the maximum carbon content may be 0.25% and the minimum yield point shall be 27,000 psi. Plates shall conform to the requirements of the current ASTM Designation A.283 Grade B.

Before wrapping the cylinder with the rod wrap, the lining is to be steam cured for a minimum period of fifteen (15) hours, after spinning with a moist steam between 100° F. and 150° F. Steam shall be applied to the inside lining within approximately two (2) hours after

spinning. In lieu of steam curing, the lining may be kept moist for a minimum period of fifty-four (54) hours. This shall be accomplished by tightly sealing the ends of the cylinder with a waterproof membrane to retain the moisture in the mortar.

Upon the award of the contract, the Contractor shall furnish the Engineer shop drawings showing the pipe and fittings to be furnished and shall include a location-profile and a tabulated layout schedule as required by the Engineer. Such drawings shall be subject to the approval of the Engineer and fabrication of pipe and fittings shall not be commenced until such drawings have been approved by the Engineer.

Concrete cylinder pipe, fittings, specials, and valves are to be installed at locations shown on the plans.

Unless otherwise indicated, pipe in trenches shall be laid to the grade shown on an even grade from point to point for which elevations are furnished. The grade line shown on the plans is the invert or flow line. The Contractor shall establish the grade line in the trench or excavation from grade stakes established by the Engineer.

Pipe, fittings, valves, and other accessories shall be hauled to and distributed at the site of the project by the Contractor; they shall at all times be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists or cranes as specified below or rolled on skidways in such manner as to avoid shock. Under no circumstances shall pipe be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. Pipe shall be placed on the site of the work parallel with the trench alignment and with bell ends facing the direction which the work will proceed unless otherwise directed.

Proper implements, tools, equipment, and facilities shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, fittings, specials, valves, etc., shall be lowered into the trench by means of a "side boom", crane, or other suitable machine and shall not be rolled or dumped into the trench. The "side boom", crane, etc., shall be of a sufficient size for handling the pipe, shall lift and lower the pipe at a slow rate of speed, and shall be capable of stopping the lifting operation at any point without producing a shock or otherwise jerking or vibrating the pipe. The hoisting cable pipe clamp shall be connected to the pipe in such a manner so as to prevent damage to the coating. The method of connection shall be subject to the Engineer's approval. Before lowering into the trench, each joint of pipe shall be inspected and any unsound or damaged pipe shall be rejected.

The pipe shall be kept clean during the laying operation and free of all sticks, dirt, and trash, and at the close of each operating day the open end of the pipe shall be effectively sealed against the entrance of all objects and especially water. No pipe shall be laid in water or when the trench conditions or the weather are unsuitable for such work, except in an emergency and then only upon permission of the Engineer.

All pipe shall be laid accurately to established lines and grades with valves and fittings at the required location and with joints centered and spigots home. Line and grade stakes will be provided by the Engineer.

Where it becomes necessary to make deflections in the line of the pipe, sections of pipe with beveled ends or fabricated fittings shall be used. Minor deflection of the line of the pipe may be obtained in the pipe joints; however, the maximum joint opening caused by such deflection shall not exceed three-quarter (3/4") inch for sixteen (16") inch pipe and larger. Field cuts of the pipe will not be permitted.

Sections of pipe shall be tightly fitted together, and care shall be exercised to secure true alignment and grade.

Before laying each joint of pipe the bell and spigot rings shall be thoroughly cleaned by wire brushing and wiping until clean and dry. Where pipe is being laid the gasket shall be placed on the spigot ring, and the spigot end of the pipe shall then be entered into the bell of the adjoining pipe and forced into position. The gasket and the inside surface of the bell shall be lubricated with a suitable solution (flax soap) which will facilitate the telescoping of the joint. The inside joint recess between ends of the pipe sections shall have a maximum and minimum width of one (1") inch and one-quarter (1/4) inch respectively. No "blocking up" of pipe or joints will be permitted.

The exterior joint shall be made by placing a cloth joint wrapper around the pipe which will be held in place with two (2) strands of wire. The cloth wrapper shall be seven (7") inches wide and hemmed on each side so that the wire "ties" may be inserted to hold the wrapper in place. The cloth shall be of such length that it will encircle the pipe, leaving enough opening between the ends to allow the mortar to be poured inside the wrapper. The wire ties shall be sixteen (16) gauge black annealed wire, or approved equal, and shall be of such length as to encircle the pipe and overlap at the ends about eight (8) inches for tying. The wrapper shall be securely fastened before the joint is poured. The wire wrapper shall be similar and equal to the wrappers (diapers) as made by the Mar-Mac Manufacturing Company. The grout used for pouring the joint shall consist of one (1) part Portland Cement (Type 1) to two (2) parts of clean, fine, sharp plaster sand and mixed to the consistency of thick cream. The joint shall be filled with this grout from one side in one continuous operation until the grout has flowed entirely around the pipe. During the filling of the joint it shall be rodded with flexible wire to settle the grout.

Upon completion of backfilling of the pipe trench the inside joint recess shall be filled with a Portland cement mortar consisting of one (1) part cement to two (2) parts sand. After the joint has been filled the surface of the joint shall be leveled with the interior surface of the pipe, and the face of joint brushed with a wet brush.

Careful inspection shall be made of each joint to insure a smooth continuous interior surface. The interior of the pipe shall be thoroughly cleaned and any obstructions that may reduce its carrying capacity removed. Following completion of the pipe line progressively or in sections, including completion of inside joints and inspections, insofar as might be possible or practicable, the line shall be kept filled with water.

Whenever necessary to patch any inside surface cuts on the inside surface of the pipe and where necessary to patch any chipped areas at the ends of pipe, such patches shall be made with a mortar of one (1) part Embeco (as manufactured by the Master-Builders Company), one (1) part Portland cement, and one (1) part clean, sharp sand, all measurements to be by

weight. Pipe thus patched shall not be installed until the patch has been properly and adequately cured and unless approved for laying by the pipe manufacturer's inspector and by the Engineer.

# W.5.6. AWWA C 303-REINFORCED CONCRETE WATER PIPE

The use of AWWA C 303 pipe may be used in lieu of Federal Specification SS-P-381 pipe when shown and approved on the plans. When used AWWA C 303, concrete cylinder pipe, pretensioned reinforcement, shall comply with the applicable provisions of the American Water Works Association (AWWA C 303-70). The pipe design shall take into account the laying conditions and working pressure shown on the plans.

# W.5.7. ORIGIN OF PIPE

All pipe shall be new, and shall be manufactured within the Continental Limits of the United States of America, and shall be approved by Underwriters Laboratories, Inc. or Factory Mutual and acceptable to the Texas State Board of Insurance.

### W.6.1. GATE VALVES

In general, all gate valves shall conform to the Standard Specifications for Gate Valves for Ordinary Water Works Service, AWWA C 515 or latest revision for valves up to 12", and AWWA C 500, or latest revision for sizes over 12", except for changes or additions specifically outlined as follows:

Valves shall have hub, flanged, or mechanical joint ends, or a combination of hub, flange, or mechanical joint ends as may be specified. Bell and spigot pipe sizes two (2") inch to twenty-four (24") inch will use valves with bells conforming to AWWA C 100. Mechanical joint pipe sizes two (2") inch to thirty-six (36") inch will use valves with bells conforming to AWWA C 111. Flanged pipe will use valves with flanged ends conforming to ASA B 16.1 Class 125.

All gate valves shall be iron body, bronze mounted, resilient seat or double disc, parallel seat, non-rising stem, internal wedging type. Valves must embody the best workmanship and finish, and open and close freely and easily. In closing, the gates must move without friction to their position opposite their ports, both discs being then closed squarely against the seat rings. When valves are in full opened position, the discs shall be raised clear of the water way and provide an opening equal to the full normal diameter of the valve.

Gate valves shall be tested at a hydrostatic pressure of 300 pounds per square inch, and shall be guaranteed for 150 pounds water working pressure. Any leakage at the pressures through any castings or between the bronze ring and the cast iron body shall cause the said casting or assembled fitting to be rejected. No plugging or patching to stop any leakage will be permitted.

All gate valves shall open by turning to the left.

Gate valves two (2") inch to sixteen (16") inch, inclusive, shall be nut or handwheel operated, as shown on the plans. Gate valves twenty (20") inch and larger shall be

equipped with wheels and nuts. Gate valves twenty (20") inch and larger shall be equipped with spur or beveled gears as indicated on the plans. All geared valves shall be equipped with extended type grease cases. Stuffing boxes shall be located on top of valve bonnet and shall be outside of the gear case. Gate valves eighteen (18") inch and larger shall be equipped with non-rising stem bypass valves, wheel and nut operated, of the following sizes:

Gate valves 18" and 20" - 3" bypass Gate valves 24" and 30" - 4" bypass, stem 60,000 Gate valves 36" and 42" - 6" bypass, stem 80,000

All bronze metal used in the working parts of the valve, with the exception of the valve stem, shall have a tensile strength of 34,000 pounds per square inch.

Gate valves of the internal wedging type shall have solid wedges made of high grade bronze, having a tensile strength of at least 50,000 pounds per square inch, with wide bearing surfaces of sufficient thickness to guarantee no bending or denting under abnormal strain, and such bearing surfaces shall be ground to flat surfaces on each face. The wedges in valves twelve (12") inch and over may be trimmed with a heavy bronze mounting.

Gate valve stems or spindles shall be of high-tensile strength manganese bronze, or other non-corrodible metals which produce a valve stem or spindle having tensile properties at least equal to those of Class "A", Leaded High-Strength Yellow Brass (Manganese Bronze) Sand Castings, ASTM Designation B.132.

A thrust collar on the spindle shall be cast integral with the spindle. A spindle having a thrust collar fastened or upset by any mechanical means is not acceptable. (There shall be provided a stem collar bushing suitably machined, to permit repacking the valve when it is in full open position. The stuffing boxes and glands shall be bronze bushed).

All gray iron castings shall be made from superior quality iron, of touch and even grain, having a tensile strength of not less than 30,000 pounds per square inch, without blow or sand holes or defects of any kind.

All gate valves installed in horizontal position whose discs do not revolve shall be equipped with bronze tracks, rollers and scrapers. Valves installed flat in vertical lines shall be equipped with bronze shoes and slides.

The manufacturer shall be required to furnish the Owner with certified copies of the hydrostatic tests and physical test of all metals used in the manufacture of the valves.

Detail prints shall be furnished on all valves.

Gate valves (including tapping sleeves and valves) shall be Mueller, or approved equal.

### W.6.2. BUTTERFLY VALVES

Butterfly valves shall be of the full lug (water service) body style as noted on the plans. All valves shall be suitable for use with ANSI 125 pound flanges and meet the requirements of AWWA C-504. Bodies shall be cast or ductile iron.

Lug body valves shall have a retained seat and shall provide tight shutoff up to the full valve rating on dead end or isolation service without the use of downstream flanges.

All valves shall be furnished with self lubricated bearings of TFE coated stainless steel. Shaft seals shall be provided to prevent leakage and to protect bearings from internal or external corrosion.

Seats shall be of the reinforced resilient type and shall be field replaceable. Seats shall also act as a body liner to prevent flow from contacting the body casting. Seats shall have flange sealing lips to provide a positive seal without use of flange gaskets.

Seats shall be of Neoprene for Water Service. Shafts shall be one piece and shall be of 316 stainless steel. Shaft diameter shall meet the 75B standard from AWWA specification C 504 for butterfly valves. Shafts shall be finish ground and polished to minimize bearing and shaft seal wear. Shafts of 8" and larger valves shall have a non-adjustable thrust collar.

Discs shall be bronze or semi-steel with welded nickel edge. The disc-to-shaft connections shall be type 306 stainless steel. Pins, shaft and disc of all valves shall be individually machined and completely interchangeable.

Valves shall be available with field interchangeable manual or powered actuators as required. The actuator-to-shaft connection shall be designed to shear and prevent internal valve damage if the disc closes on foreign material in the pipeline. All actuators shall provide external indication of disc position.

All manually actuated valves shall be operated using a cast iron housing designed for burial service with 2" square wrench nut actuator available in buriable construction. All units will have adjustable open and closed position stops with provision to prevent accidental adjustment changes. Operating shaft to be supported axially and radially at input end by permanently lubricated bronze thrust and sleeve bearings.

Valve and actuators shall be as manufactured by Mueller, DeZurik, American Darling or approve equal.

# W.6.3. <u>AIR VALVES</u>

Air valves and vacuum valves, when shown on the plans or required, shall be the float and lever type, as is manufactured by Val-Matic, or equal. The inlet ends will be screwed for two (2) inch and smaller, and flanged for three (3") inch and larger.

# W.6.4. BRASS VALVES

One and one-half (1-1/2") inch and two (2) inch brass valves, when shown on the plans or required, shall be of all brass construction with double discs, and parallel seats, and warranted for a water working pressure of 150 pounds per square inch.

They must be of non-shock type, with screw ends having internal standard pipe threads. They shall be fitted with a malleable iron operating wheel, and shall open by turning to the left.

# W.6.5. INSTALLATION OF GATE VALVES

All valves shall be installed as shown on the plans. For each gate valve the Contractor shall furnish and install a valve box.

Valve boxes shall be three (3) piece screw type cast iron of the extension type and shall be similar to Mueller No. H-10360 or an approved equal. For fourteen (14") inch and sixteen (16") inch valves Mueller No. H-10357 with No. 160 base or equal shall be furnished and installed. For eighteen (18") inch and larger valves manholes five (5') feet in diameter will be required.

Valves shall be carefully handled and lowered into position in such a manner as to prevent damage to any parts of the valve.

Valves shall be placed in such positions as indicated on the plans with the stem in a vertical position and securely held until all connections have been made.

Gate valves and pipe fittings shall be set and jointed to new pipe in the manner herein specified for cleaning, laying, and jointing pipe. Hub ended valves shall be jointed to pipe only with lead joints. Flanged and mechanical joint valves will be preferred where suitable.

Cast iron valve boxes shall be firmly supported and maintained centered and plum over the wrench nut of the gate valve. The box cover shall be set flush with the surface of the ground or at such other level as may be directed.

### W.7.1. FIRE HYDRANTS

Fire hydrants, when required and when shown on the plans, shall conform strictly to AWWA Specifications C-502 Fire Hydrants for Ordinary Water Works Service, with the following supplementary details and changes or additions:

- 1. Fire hydrants shall meet the requirements of the Texas State Board of Insurance.
- 2. Type of shut-off may be compression type with the flow or compression type against the flow.

- 3. Unless otherwise ordered inlet connection shall be six (6") inch standard mechanical joint hub, complete with all joint accessories. Inlet valve shall have not less than a five (5") inch opening.
- 4. All hydrants shall be equipped with two (2) hose nozzles and one (1) pumper nozzle. The hose nozzles shall be two and one-half (2-1/2") inch nominal I.D. National Standard Thread. Pumper nozzle shall be four (4") inch nominal I.D. National Standard Thread.
- 5. Unless otherwise required by pipe laying conditions, hydrants shall be furnished for a four (4') foot depth of trench.
- 6. A drain opening will be required and drain valves operating through gravity will not be accepted.
  - 7. All fire hydrants shall open by turning to the left (counterclockwise).
- 8. All fire hydrants shall be painted with two (2) coats of paint over one (1) shop coat.
  - 9. No hydrant will be accepted that requires less than twelve (12) turns to open.
- 10. Hydrants shall be of the breakable type, designed to break approximately three (3") inches, but not over five (5") inches above the ground line. These parts shall be of the breakable flange type, or integral flange with sawed bolts. Breakable flanges screwed to the standpipe are not acceptable. Flanges shall be so designed that an end wrench can be used on the nuts and bolts. Provision shall be made in the design of the stem to disconnect the stem from the hydrant parts above the standpipe breakpoint in the event of traffic accident. If breakable or sleeve type couplings are used, they shall have sufficient torsional strength such that a torsional failure of the stem will occur at some point other than at the coupling. Design of the coupling shall be such that when the coupling is broken no parts will come loose and fall into the hydrant, and the break will not occur through the pins or bolts holding the coupling to the stem.
- 11. All hydrants shall be capable of being extended to accommodate future grade changes.
- 12. Main valve seats on compression type hydrants closing with the flow shall be of such design that incorrect positioning is impossible and that the threads will be adequately guided into position. Arrangements shall also be made to hold the main valve gasket in place during assembly.
  - 13. All packing gland nuts shall be bronze.
- 14. Gaskets furnished for ground line flanges shall be full face or the flange shall be recessed to hold the gasket in place.
- 15. Operating stems whose threads are located in the barrel or waterway shall be of manganese, bronze, everdur, or other high quality, non-corrodible metal, and all working parts in the waterway shall be bronze to bronze. Operating stems whose threads are not located in the

barrel or waterway may be made of high grade bronze, genuine wrought iron or steel, and stem nuts shall be bronze. Iron or steel stems shall have a bronze, stainless steel or other non-corrodible metal, sleeve where passing through stuffing box or O-rings. Operating threads must be sealed against contact with the water at all times regardless of open or closed position of the main valve.

- 16. O-rings may be furnished in lieu of packing. They shall be the double O-ring type, designed so that the rubber rings move against a bronze surface.
- 17. Hydrants closing with or against the pressure must have a bronze cap nut to seal the bottom end of stem threads against contact with water.
- 18. Hydrants must be so constructed that the nozzle may be faced in any direction.
- 19. No hydrant will be considered which has not been regularly manufactured and in successful continuous use for at least ten (10) years.

#### W.7.2. FIRE HYDRANT INSTALLATION

Fire hydrants shall be located as shown on the plans or as directed by the Engineer and shall be set truly vertical with the base resting upon a stone or concrete slab four (4") inches thick and approximately twelve (12") inches square. The base of the hydrant shall be surrounded by not less than two (2) cubic feet of clean crushed stone or gravel, size one (1") inch to two (2") inches. Pipe joints shall be made as specified for pipe laying. The hydrants shall be carefully and substantially blocked against firm trench walls with sound stone, sound slabs of old concrete or 2000 p.s.i. concrete, but no additional pay will be allowed for same.

## W.8. <u>INSPECTION</u>

During the process of unloading, all pipe and accessories shall be inspected by the Contractor for loss or damage in transit. No shipment shall be accepted by the Contractor until notation of any lost or damaged material shall have been placed on the bill of lading by the agent of the carrier.

All pipe and accessories shall be laid, jointed, tested for defects and for leakage with pressure, and chlorinated in the manner herein specified in the presence of the Engineer or his authorized Inspector and subject to their approval.

All material found during the progress of the work to have cracks, flaws, or other defects will be rejected by the Engineer, and the Contractor shall promptly remove from the site of the work such defective material.

The Contractor shall be responsible for all material furnished to him or by him and shall replace at his own expense all such material that is found to be defective in manufacturing or that has become damaged in handling after delivery by the manufacturer. The Contractor shall be responsible for the safe storage of material furnished by or to him until it has been incorporated in the completed project.

Pipe fittings, valves and other accessories shall be unloaded at the point of delivery, hauled to, and distributed at the site of the project by the Contractor. They shall, at all times, be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists, slid, or rolled on skidways in such a manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground.

In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench. Pipe shall be handled in such a manner that a minimum amount of damage to the coating will result. Damaged coating shall be replaced in a manner satisfactory to the Engineer.

Pipe shall be placed on the site of the work parallel with the trench alignment and with bell ends facing the direction on which the work will proceed unless otherwise directed. The interior of all pipe, fittings, and other accessories shall be kept free from dirt and foreign matter at all times.

## W.9. PIPE HANDLING

Proper implements, tools, and facilities shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, fittings, and valves shall be carefully lowered into the trench piece by piece by means of derrick ropes or other suitable tools or equipment in such a manner as to prevent damage to pipe or pipe coating. Under no circumstances shall pipe or accessories be dropped into the trench.

At all times when pipe laying is not in progress, the open ends of the pipe shall be closed by approved means. No trench water shall be permitted to enter the pipe. All foreign matter or dirt shall be removed from the pipe, and it shall be kept clean by approved means during and after laying. No pipe shall be laid in water or when trench conditions are unsuitable for such work.

Cutting of pipe for inserting valves, fittings, or closure pieces shall be done in a neat workmanlike manner without damage to the pipe. Concrete pressure pipe shall not be cut on the job without the approval of the Engineer.

## W.10.1. <u>DUCTILE IRON PIPE LAYING AND JOINTING</u>

The spigot shall be centered in the bell and the pipe forced "home" and brought into true alignment. Water lines shall be laid such that the full length of the barrel of the pipe shall rest on undisturbed or compacted fill or gravel cushion for the entire length of the joint of pipe except at bell holes, to insure that there is no beam action of the pipe. It shall be secured there with earth carefully tamped under and on each side of it, excepting at the bell holes. Care shall be taken to prevent dirt from entering the joint space. No blocking up of the pipe or joints will be permitted. Whenever it is necessary to deflect pipe from a straight line, either in the vertical or horizontal plane, to make small angles in alignment to avoid obstructions, to plumb stems, or for other reasons, the degree of deflection shall not exceed that shown by the Handbook of the Cast Iron Research Association.

Although the above section applies primarily to bell and spigot pipe, all applicable portions apply as well to "Tyton", "Bell-tite", or "Fastite" and mechanical joint pipe.

#### W.10.2 JOINTING PIPE

- 1. Materials: All component parts are to be furnished with and included in the price bid for pipe. The materials consist of a circular rubber gasket of modified bulb shape in cross section.
- 2. Procedure: Remove any foreign matter in the gasket seat of the socket, wipe gasket clean, flex gasket and place in socket with the large round end or bulb end entering first. Seat gasket evenly around inside of the socket with the groove fitted over the bead. Remove any bulges. Apply a thin film of lubricant furnished by the pipe manufacturer to the inside surface of gasket. No lubricant other than that furnished with the pipe by the pipe manufacturer will be allowed to be used. Wipe plain end of pipe to be entered, clean and place in approximate alignment with the bell of the pipe to which it is to be joined. Apply a thin film of the lubricant to the outside of the plain end for about one (1") inch back from the end. Align the pipe and carefully enter the plain end into the socket until it just makes contact with the gasket. Complete joint assembly by forcing the plain end of the entering pipe past the gasket until it makes contact with the bottom of the socket. For pipe in sizes 10" and larger, a jack-type tool will be used to make up the joint and complete the assembly of the joint in forcing the plain end of the pipe past the gasket.
- 3. Deflection of Joints: The maximum deflection at each joint will not exceed 5 degrees for sizes through 12", 4 degrees for 14" and 16", and 3 degrees for 18", 20" and 24" pipe sizes. If a profile is shown on the plans, the Contractor will be required to lay the line to conform to the grades shown. If it is necessary that water line shall have over 42 inches of cover in order not to exceed the manufacturer's recommendations for deflection of the pipe, the Contractor shall excavate the ditch with no extra compensation. Regardless of the depth of ditch necessary, the Contractor shall, under no condition, exceed the manufacturer's recommendations for deflection of the pipe at joints. The Contractor will receive no extra compensation for extra depth necessary to cross existing utility lines.

Attention is called to the fact that concrete cylinder pipe must be laid on grade to insure proper jointing of the pipe. The grades will be determined in such a manner so as to avoid excessive use of fittings and specials and to provide a uniform grade between low points and high points. No additional compensation will be paid for extra trench depth required, to meet these conditions. Any differences of opinions concerning the grades as set by the Engineer must be resolved by the Contractor prior to pipe laying.

## W.11. CLEARANCE FROM OTHER PIPES

Water lines and sanitary sewers shall be installed no closer to each other than 9 feet. Where this cannot be achieved, the sanitary sewer shall be constructed of pressure type cast iron pipe or the equivalent of 150 psi pressure pipe with water tight joints used in water main construction for the 9 foot clearance. No physical connection shall be made between a drinking water supply, public or private, and the sewer or any appurtenances.

Any facilities for permitting discharge of drinking water into the sewer or any appurtenance thereof shall be constructed so as to prevent any possibility of sewage entering the drinking water system.

## W.12.1. SERVICE CONNECTIONS

Water service connections shall be made by tapping the mains at specific points as designated by the Engineer. Service taps shall be made after the mains have been laid. The work shall be done by experienced workmen with suitable tapping machine and tools.

The copper (as called for on the plans) service pipe shall be connected to the corporation cock at the main and laid in the trench from one side to the other every ten (10') feet to give ample space for expansion and contraction of the pipe. The service pipe shall have a cover of twenty-four (24") inches, except where the service pipe shall pass under the curb. At this point the service pipe shall be a minimum of eighteen (18") inches under the top of the curb or a minimum of six (6") inches under the bottom of the curb and gutter section. Excessive bending of the pipe which will injure or reduce the cross sectional area of the pipe will not be permitted. The length of the service line shall extend from the mains to a point two (2') feet back of the street curb where curb exists, or to the property line if no curb exists. If there is a curb, the curb shall be marked with the letter "W" in good quality green paint at the point where the service pipe passed under the curb.

## W.12.2. SERVICE CONNECTION MATERIALS

The service pipe shall normally be 3/4 inch type "K" soft copper pipe, and shall conform to ASTM Class "A" Specifications and U.S. Government Specifications WW-T-799 as well as AWWA Specification 7S-CR. Within structures hard drawn Type L tubing (furnished in straight lengths) shall be used, rigidly and adequately supported.

Corporation cocks and angle stops shall be as shown on the plans.

Water meter boxes where required shall be of concrete construction with cast iron locking type lid. Brooks Products, Inc. plate No. 36 H.L.D. meter box for 3/4" water meter or equal.

## W.13. CONNECTION TO EXISTING WATER MAINS

Where indicated on the plans and/or hereinafter specified, the Contractor shall connect the new main with existing mains or lines. The Contractor shall furnish all labor, materials, equipment or services required for the locating and uncovering of the existing line, the making of cuts in the existing line, the removal, relocation, and lowering of existing lines as required, dewatering of the trench, connecting of the existing line into the new main and any and all appurtenant work required for a complete connection. Relocated mains or lines shall be laid so that all valves so relocated or installed shall be set vertically.

Only such connections to existing mains as are necessary to load, test and sterilize mains under construction with water from city mains will be permitted prior to the sterilization of new mains. All other connections to existing mains from a new main being constructed shall

be made only after the new main has been adequately and satisfactorily sterilized and the Engineer or his inspector has authorized the connections to be made. Contractors will be required to plug and block lines, crosses, tees or other fittings installed in the new main to permit testing and sterilization prior to the making of connections. Such plugs and blocking shall be adequate to withstand a test pressure of 150 pounds per square inch.

Where cut-ins are made immediately adjacent to valves which are under pressure, the Contractor shall take all necessary precautions to brace such valves with temporary blocking and bracing which shall be of ample size and properly placed to prevent movement or blowing off of any pipe, valves or fittings due to water pressure on the main.

Connections to existing water mains shall be made at the locations shown, as specified, and/or as directed by the Engineer. All such connections shall be made in a most expeditious and workmanlike manner to cause the least inconvenience to water customers and to traffic and shall be made at night unless otherwise approved by the Engineer. The detailed schedule of operations for making each connection shall be approved by the Engineer or his inspector before any work thereupon is commenced.

## W.14. <u>HYDROSTATIC TEST</u>

After the pipe has been laid and backfilled but prior to replacement of pavement each valved section of newly laid pipe shall be subjected to a hydrostatic pressure test. For any section being tested the pressure applied shall be such that at the highest point in the section the pressure shall be 127.5 pounds per square inch. Adjustment as required shall be made for differential in elevation between the low point of the section being tested and the centerline of the pressure test gauge. The maximum pressure shall be 180 psi at the lowest point.

Each valved section of pipe shall be slowly filled with water, and the specified test pressure measured to the point of lowest elevation, shall be supplied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connection, and all necessary apparatus including gauges and meters shall be furnished by the Contractor. The Owner will furnish water for filling lines and making tests through existing mains.

The duration of each pressure test shall be four (4) hours. Before applying the specified test pressure all air shall be expelled from the pipe. To accomplish this taps shall be made, if necessary, at the points of highest elevation and afterwards tightly plugged. At intervals during the test the entire route of the pipe line shall be inspected to locate any leaks or breaks. Any defective joints, cracked or defective pipe, fittings, or valves discovered in consequence of this pressure test shall be removed and replaced with sound material in the manner provided, and the test shall be repeated until satisfactory results are obtained.

No pipe installation will be accepted until the leakage is less than a rate equal to twenty-two (22) gallons per inch of nominal diameter of pipe line per mile over a twenty-four (24) hour period for ductile iron pipe and twenty (20) gallons for PVC.

Should any test of pipe in place disclose leakage greater than that specified, the Contractor shall at his own expense locate and repair the defective joints until the leakage is within the specified allowance.

Leakage is defined as the quantity of water supplied into the newly laid pipe, or any valved section of it, necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

## W.15. <u>STERILIZATION OF WATER MAINS</u>

During the construction operations workmen shall be required to use utmost care to see that parts of the structures, inside of pipes, fittings, jointing materials, valves, etc., the surface of which come in contact with City water are maintained in a sanitary condition.

Every effort must be made to keep the inside of the pipe, fittings and valves free of all foreign matter, sticks, dirt, rocks, etc. As each joint of pipe is being laid it must be effectively swabbed so that all foreign matter is removed. All fittings and exposed open ends of pipe must be blocked or capped until the line is completed.

When the entire pipe line or certain selected sections thereof have been completed, tested and made ready for turning over to the Owner ready for use, the line or section of line shall be thoroughly sterilized according to AWWA C-651 and the following procedure:

- 1. The line shall be flushed out, completely replacing its entire volume with water from the Owner's mains.
- 2. Chlorine will be injected into the section of line being sterilized so that its entire capacity will be filled with water containing chlorine in the amount of fifty (50) p.p.m. or in such other quantity as determined by the Engineer. The sterilizing agent shall be introduced at one end of the section and the water released from the opposite end until the sterilizing agent is present at the discharge end in such quantity as to indicate a residual-chlorine of fifty (50) p.p.m. or as otherwise determined by the Engineer. All valves shall be opened and closed several times and the sterilizing solution permitted to remain in the pipe line section for not less than twenty-four (24) hours.
- 3. At the end of the sterilizing period the sterilizing solution shall be discharged from the pipe and replaced with water direct from a main of the Owner.
- 4. A sample of water from the sterilized main shall be taken (not through a fire hydrant) from a suitable tap under the supervision of the Engineer or his Inspector and submitted to an approved testing laboratory or the State Health Department for analysis. If the test shows a satisfactory quality of water, the line so sterilized shall then be placed in service by the Contractor who shall notify and assist the Water Superintendent in location and operation of all valves installed by the Contractor. If the sample shows unsatisfactory quality of water, the process of sterilization shall be repeated until a satisfactory water is obtained.

Sterilization of the line or any section thereof shall not be commenced until the Engineer's approval of the method, apparatus, sterilizing agent, and the section of the line has been obtained.

## W.16. <u>CONCRETE BACKING</u>

Concrete having compressive strength of not less than 2000 pounds per square inch shall be used as a cradle or backing where shown on the plans or where directed by the Engineer. All materials including aggregates, cement, and water, as well as the mixing and placing of the concrete, shall be approved by the Engineer. Bends of twenty-two and one-half (22-1/2) degrees and greater, plugs, and all tees, crosses, etc. shall be placed between solid ground and the fitting to be anchored; the area of bearing on pipe and on ground in each instance shall be that required by the Engineer. The backing shall, unless otherwise directed, be placed so that the pipe and fitting joints will be accessible for repair.

Concrete shall be composed of normal Portland Cement, coarse aggregate, fine aggregate, and water proportioned and mixed properly in a concrete mixer. Transit mix concrete will be allowed. Portland Cement shall be Type 1 and shall be fully protected until incorporated in this work. Gravel to be used for coarse aggregate shall consist of clean hard, durable grains, and shall be free from an excess of salt or alkali and foreign materials. Concrete shall have a compressive strength of not less than 2000 pounds per square inch at twenty-eight (28) days and shall not have less than three (3) sacks of cement nor more than six and three-quarters (6-3/4) gallons of water per cubic yard of concrete.

#### W.17. <u>CLEAN-UP</u>

During construction the Contractor shall maintain the premises in an orderly, neat, and presentable manner. Scraps and debris shall not be left scattered but shall be assembled together and such as are unusable shall be moved from the premises or disposed of to the satisfaction of the Engineer. When construction of the contract has been otherwise completed, the Contractor shall remove all left over construction materials, equipment, scraps, debris, and rubbish. Earthwork shall be smoothed and graded to the lines shown on the plans. Backfill over all trenches shall be left in a uniform and neat condition.

## W.18. MEASUREMENT AND PAYMENT

The bid items include the work of every nature required for the completion of the job in every respect except as may be otherwise provided for in these specifications. The Contractor shall include the furnishing of all materials and labor, including any incidental labor, in his bid prices.

- 1. Pipe: Pipe will be measured from center of fitting to center of fitting or end of pipe without any deduction for the length of intermediate fittings or valves. Payment will be made at the price bid per foot for furnishing and installing pipe, which bid price will include all costs for the complete pipe installation, including trenching and backfill, and shall include all work not otherwise provided for in these specifications.
- 2. Fittings: Payment for fittings will be at the unit price per ton bid for such work. This shall include the furnishing and installation of the fitting. This unit price shall also include the cost of concrete backing or blocking. Weight shall be determined from the manufacturer's catalogs. No separate payment will be made for galvanized pipe fittings. If

mechanical joint fittings are used, payment will be based on weights of mechanical joint fittings and joint accessories.

- 3. Gate valves and tapping sleeves and valves will be paid for at the unit price bid for each, which price shall include the cost of the valve or tapping sleeve and valve, as well as the valve box and labor complete in place.
- 4. Fire Hydrants: Payment for the furnishing and installing of fire hydrants will be made at the unit price bid, complete in place.
- 5. Connections to Existing Mains: Payment for valves, fittings, pipe, etc., will be made at the unit price bid for the various items. No additional payment will be made for "WET" connections, but a lump sum will be paid for each "DRY" connection made as specified in these specifications.
- 6. Concrete Backing: No separate payment will be made for concrete backing or blocking of fittings, valves, etc. The Contractor shall include such costs in the price bid for setting fittings, valves, etc.
- 7. Hydrostatic Test: No separate payment will be made for the hydrostatic test. The cost of the test shall be included in the bid price for pipe in place.
- 8. Sterilizing: No separate payment will be made for sterilizing the main. The cost of such work shall be included in the price bid for pipe in place.
- 9. Water Services: Water services will be paid for as a lump sum bid for each water service connection. The lump sum will include tapping the main, furnishing and installing the corporation stop, and the copper service line necessary to connect to the existing water service.

## W.19. SANITARY SEWER AND WATER MAIN SEPARATION DISTANCES

The following separation distances shall be maintained between potable water and wastewater treatment plants, and waterlines and sanitary sewers.

- A. Water line/new sewer line separation. When new sanitary sewers are installed, they shall be installed no closer to waterlines than nine feet in all directions. Sewers that parallel waterlines must be installed in separate trenches. Where the nine foot separation distance cannot be achieved, the following guidelines will apply:
- (1) Where a sanitary sewer parallels a waterline, the sewer shall be constructed of cast iron, ductile iron or PVC meeting ASTM specifications with a pressure rating for both the pipe and joints of 150 psi. The vertical separation shall be a minimum of two feet between outside diameters and the horizontal separation shall be a minimum of four feet between outside diameters. The sewer shall be located below the waterline.

- (2) Where a sanitary sewer crosses a waterline and the sewer is constructed of cast iron, ductile iron or PVC with a minimum pressure rating of 150 psi, an absolute minimum distance of 6 inches between outside diameters shall be maintained. In addition the sewer shall be located below the waterline where possible and one length of the sewer pipe must be centered on the waterline.
- (3) Where a sewer crosses under a waterline and the sewer is constructed of ABS truss pipe, similar semi-rigid plastic composite pipe, clay pipe or concrete pipe with gasketed joints, a minimum two foot separation distance shall be maintained. The initial backfill shall be from one quarter diameter below the centerline of the pipe to one pipe diameter (but not less than 12 inches) above the top of the pipe.
- (4) Where a sewer crosses over a waterline all portions of the sewer within nine feet of the waterline shall be constructed of cast iron, ductile iron, or PVC pipe with a pressure rating of at least 150 psi using appropriate adapters. In lieu of this procedure the new conveyance may be encased in a joint of 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at 5 feet intervals with spacers or be filled to the springline with washed sand. The encasement pipe should be centered on the crossing and both ends sealed with cement grout or manufactured seal.
- B. Waterline/manhole separation. Unless sanitary sewer manholes and the connecting sewer can be made watertight and tested for no leakage, they must be installed so as to provide a minimum of nine feet of horizontal clearance from an existing or proposed waterline. Where the nine foot separation distance cannot be achieved, a carrier pipe as described in subsection A (1) of this section may be used where appropriate.

## SPECIAL PROVISION TO ITEM 200 FLEXIBLE BASE

The following are changes to CoSA Standard Specifications for Construction for this project.

Item No. 200 "Flexible Base" is hereby amended with respect to the clauses cited below and no other clauses or requirements of this item are waived or changed hereby.

Revise the following:

#### Under 200.5 Measurement:

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured directly but will be subsidiary to Item 511 "Cutting and Replacing Pavements (Trench Repair).

## Under 200.6 Payment:

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be paid for directly but will be subsidiary to Item 511 "Cutting and Replacing Pavements (Trench Repair).

## SPECIAL PROVISION TO ITEM 205 HOT MIX ASPHALTIC CONCRETE PAVEMENT

The following are changes to CoSA Standard Specifications for Construction for this project.

Item No. 205 "Hot Mix Asphaltic Concrete Pavement" is hereby amended with respect to the clauses cited below and no other clauses or requirements of this item are waived or changed hereby.

Revise the following:

## **Under 205.5 Measurement:**

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured directly but will be subsidiary to Item 511 "Cutting and Replacing Pavements (Trench Repair).

## **Under 205.6 Payment:**

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be paid for directly but will be subsidiary to Item 511 "Cutting and Replacing Pavements (Trench Repair).

## SPECIAL PROVISION TO ITEM 511 CUTTING AND REPLACING PAVEMENTS (TRENCH REPAIR)

The following are changes to CoSA Standard Specifications for Construction for this project.

Item No. 511 "Cutting and Replacing Pavements (Trench Repair)" is hereby amended with respect to the clauses cited below and no other clauses or requirements of this item are waived or changed hereby.

Revise the following:

#### **Under 511.5 Measurement:**

Cutting and replacing pavements will be measured by the linear feet of pavement cut and replaced, of the type and depth indicated in the plans and bid proposal and of the limits shown in the "Backfill Detail in Pavement" detail located in the Construction Plans. Materials used in replacing bases and pavements such as flexible base, cement stabilized base, concrete, reinforcing steel, prime coat, tack coat and asphaltic concrete pavement will not be measured directly for payment. Depth will be measured from the top of pavement to the bottom of new base material.

#### Under 511.6 Payment:

Payment for cutting and replacing pavement will be made at the contract unit price bid per linear feet for "Cutting and Replacing Pavements" of the type and depth classification shown on the plans.

The contract unit price bid for "Cutting and Replacing Pavements" shall be considered as full compensation for cutting pavements, removing bases, replacing bases and pavements, removing and disposing of all surplus materials, furnishing and placing all new materials, and for all manipulations, work, tools, equipment, labor and incidentals necessary to complete the work.

#### Under 511.7 Bid Items:

Item 511.1 - Replacing with Flexible Base and Pavement - per linear foot

## SPECIAL PROVISION TO ITEM 540 TEMPORARY EROSION, SEDIMENTATION AND WATER POLLUTION PREVENTION AND CONTROL

The following are changes to CoSA Standard Specifications for Construction for this project.

Item No. 540 "Temporary Erosion, Sedimentation and Water Pollution Prevention and Control" is hereby amended with respect to the clauses cited below and no other clauses or requirements of this item are waived or changed hereby.

Revise the following:

#### Under 540.5 Measurement:

This item is measured as lump sum and shall include installation and maintenance of control measures necessary to prevent and control soil erosion, sedimentation and water pollution as necessary to comply with this item of work including the requirements of TPDES General Permit No. TXR 150000.

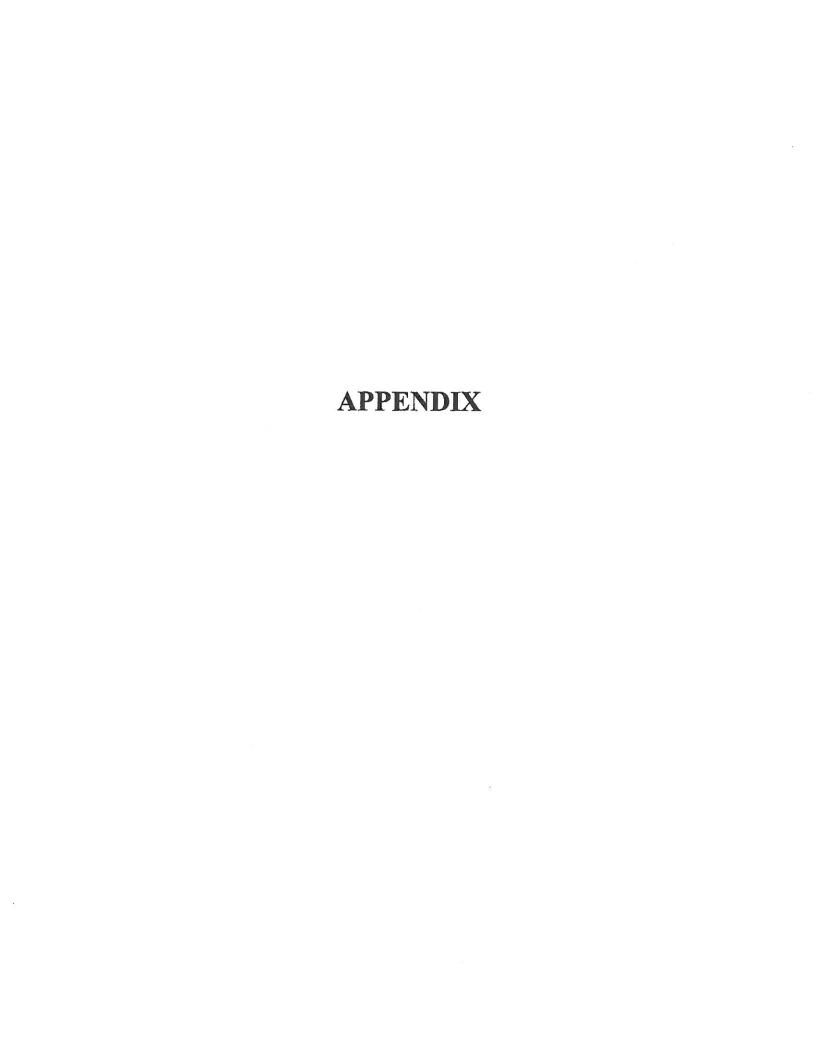
#### Under 540.6 Payment:

Payment shall be made per lump sum. This price shall be full compensation for furnishing and installing all labor, materials, supplies, equipment and incidentals necessary to complete this item of work.

#### Under 540.7 Bid Items:

Item 540.7 – Storm Water Pollution Prevention Plan (SWPPP) – lump sum

# SPECIAL PROVISIONS TO CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION (JUNE 2008)



## GEOTECHNICAL ENGINEERING STUDY

## WATER MAIN PROJECT PRESTON DRIVE AT E COURT STREET SEGUIN, TEXAS, 78155

FROST GEOSCIENCES, INC. PROJECT NO.: FGS-G09133

ZANUARY 8,2010

Prepared exclusively for

Kiotz Associates, Inc. 7550 lH-10 West, Suite 300 San Antonio, Texas 78229



Construction Materials - Forensics Environmental - Geotechnical



13402 Western Oak Helotes, Texas 78023 Phone (210) 372-1315 Fax (210) 372-1318 Www.frostgeosclences.com

January 8, 2010

Mr. Heather O'Gorman Klotz Associates, Inc. 7550 IH-10 West, Suite-300 San Antonio, Texas 78229

#### SUBJECT:

Geotechnical Engineering Study Water Main Project in Seguin Preston St. at E Court Dr. Seguin, Texas 78155 FGS Project No: FGS-G09133

Dear Mr. O'Gorman:

Frost GeoSciences, Inc. (FGS) is a geotechnical engineering company in the state of Texas with the Texas Board of Professional Engineer, registration No. F-9227, and pleased to submit the results of our Geotechnical Engineering Study for the above referenced project. This report includes the results of field and laboratory testing along with recommendations for use in preparation of the appropriate design and construction documents for this project.

FGS appreciates this opportunity to be of service to you on this phase of the project. If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Respectfully submitted, Frost GeoSciences, Inc.

CARLOS A. PONCE-CORDOVA
99927
O. UCENSED

01/08/2010

Carlos A. Ponce-Cordova, P.E. Principal Engineer

RKE/CAP-C - FGS-G09133

Copies Submitted: (3) « Klotz Associates, Inc.; Mr. Heather O'Gorman (one (1) electronic)

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FGS Project No: FGS-G09133

#### PROJECT INFORMATION

#### Project Authorization

Frost GeoSciences, Inc. (FGS) has completed a geotechnical engineering study for the Water Main Project in Seguin, Texas 78155. This project was authorized on December 10, 2009 by Mr. Williams Schook with Klotz Associates, Inc. based on our proposal (FGS Proposal No.: FGS-P-G09042 dated August 17, 2009). Our scope of services for this project is outlined in that proposal.

#### Project Description

We understand the project will consist of the installation of the 12 inches Water Main Project in Seguin. The main is approximately one mile long. It will be necessary to obtain the materials Classification and characteristics of the materials in the area of the project. A Vicinity Map showing the location of the project site is illustrated on Figure 1 and is included in the section of this report entitled Illustrations.

## Purpose and Scope of Services

The purpose of this study is to evaluate subsurface conditions at the project. Therefore our scope of services for this project included the following:

- Drilling borings at selected locations within the project limits to evaluate subsurface conditions and to observe for the potential presence of subsurface water;
- Performing geotechnical engineering laboratory tests on selected samples recovered during the drilling program to evaluate their physical and engineering properties;
- Engineering analyses to develop appropriate geotechnical engineering recommendations and guidelines,
  - General comments regarding this phase of improvements, sequences and potential difficulties that may arise during overall process as it relates to the geotechnical engineering aspects of this project.
- Preparing this written report that includes a boring location plan, log of each boring, results of the laboratory testing program, descriptions of the subsurface conditions encountered and our geotechnical engineering recommendations and guidelines developed for this project.

Our scope of services for this project did not include the assessment of any potential environmental concerns at this site nor the stability analysis of the slopes of the channel nor the definition of the type of material to be used in the contact area with the water (within the channel). Therefore, such concerns are not addressed in this report.

#### SITE AND SUBSURFACE CONDITIONS

#### Site Description

Site conditions were assessed using a combination of aerial photography and observations made by FGS personnel during our field operations. The following site conditions were noted:

 The site is located along Preston Dr. and Farm-To- Market Rd 466 and adjacent to some private properties.

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Vegetation at the site consists of grass, trees and weeds.

#### Site Geology

We reviewed the Geologic Map of the Seguin, Texas (1979) published by the University of Texas Bureau of Economic Geology in Austin. The purpose of this review was to determine the geologic setting of the project site and surrounding areas. Our review indicates that the project site is located on Quaternary Terrace deposits (Qt). The Quaternary Terrace deposits consist of three or more levels which may correspond to coastal Pleistocene units; gravel, sand, silt, and clay in various proportions with gravel more prominent in the older, higher terraces; gravel along Guadalupe River, siliceous, coarse, along Colorado River mostly limestone, chert, quartz, and various igneous and metamorphic rocks from the Llano region and Edwards Plateau; sand mostly quartz.

#### Subsurface Conditions

Subsurface conditions at the site were evaluated by drilling a total of four (4) borings soil borings. The number of borings, boring locations and boring depths were selected by FGS. The borings were located in the field by FGS personnel using Global Positioning System (GPS) technology. The borings were advanced using solid flight auger drilling techniques and soil samples were routinely obtained during the drilling process. Drilling and sampling techniques were accomplished in general accordance with ASTM procedures. Logs of these borings are presented in the Appendix included at the end of this report. A Boring Location Plan indicating the location of each boring at the project site is illustrated on Figure 2 and is included in the section of this report entitled Illustrations.

Selected soil samples obtained during our field exploration were transported to our laboratory where they were reviewed by qualified geotechnical engineering personnel. Representative samples were selected and tested to determine pertinent engineering properties and characteristics for use in our evaluation of the project site. Laboratory testing and soil classification was accomplished in general accordance with ASTM procedures.

Based on the field and laboratory data, we have determined that the stratigraphy of the site is generally as follows:

Stratum	Range of Depth, ft.	Stratum Description and Classification
I	0 - 12	FAT CLAY (CH) dark brown in surface, grade to brown to reddish brown by depth. With some Gravel that described at boring logs.
II	2 - 12	Sandy GRAVEL and Clayey GRAVEL tan and brown in color, dense, Auger refusal at 6.0 to 7.0 feet depth at Borings 8 & 10.

The subsurface descriptions shown above are general in nature and highlight major subsurface stratification features and material types. The boring log included in the Appendix should be reviewed for specific information such as soil or rock material descriptions, stratifications, sampling depths and intervals, field test data and laboratory test data. The stratifications shown on each boring log only represent the conditions and approximate boundaries between strata at that actual boring location. The actual transitions between strata may be gradual. Variations will occur and should be expected at locations away from each boring location. Subsurface water level observations made during field operations are also shown on the boring logs. The indicated stratum depths and any subsurface water levels are measured from the ground surface and are estimated to the nearest one-half (½) foot. Portions of any samples that are not altered or consumed by laboratory testing will be retained for 30 days from the date of issuance of this report. Unless otherwise

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requested by the client and/or depending upon project requirements, all soil samples will be discarded after that retention period.

#### Subsurface Water Information

The borings were advanced using dry drilling techniques to their full depths in an attempt to detect the potential presence of subsurface water in the borehole. Subsurface water was not encountered during drilling. The boreholes were backfilled with soil cuttings upon completion of drilling operations and subsurface water observations.

Short-term field observations generally do not provide accurate subsurface water levels for evaluation at most sites. Subsurface water levels are generally influenced by seasonal and climatic conditions that result in fluctuations of subsurface water levels over time. The stratum II materials present at this site may contain materials that are granular in nature and may transmit water easily. Therefore, subsurface water conditions should be checked just prior to any excavation activities. Specific information concerning subsurface water is noted on the boring log presented in the Appendix of this report.

## ENGINEERING ANALYSIS AND RECOMENDATIONS

#### Geotechnical Discussion

For this particular project, a series of laboratory test were performed on the samples obtained and the results of these tests are shown in the logs at the end of this report.

In general terms, it can be observed that the material that is present in the studied area is CLAY; the P.I. (Plasticity Index) values obtained at the lab. Imply that this CLAY can present movements (swelling and shrinking) when in contact with water.

Another element to observe in the logs is the high contents of fine material (about 90%) in all tests performed; this is a clear indication of CLAY material.

In conclusion it can be said that the material present is clay and that this clay can present movements when in presence of water (either gaining or loosing will produce swelling or shrinkage respectively).

It also be noted that if any type of excavation is going to be performed in this material (clay) this excavation process should be done promptly avoiding leaving the excavated area open for more the 48 hour (if possible excavate and backfill sections the same day).

#### Excavations:

As was discussed previously, stratum I materials were encountered at this site. Soil materials that are penetrated by geotechnical augers can generally be excavated with conventional earthmoving equipment. Stratum II materials has some chert in boring No. 8 and 10 below 6.0 feet depth, and heavy equipment and techniques for excavation will likely be necessary. It should be noted that excavation equipment varies and field conditions may vary. Generally, geologic processes (such as faulting, weathering, etc.) are erratic and large variations can occur in small lateral distances. Details regarding "means and methods" to accomplish the work (such as excavation equipment and technique selection) are the sole responsibility of the project contractor.

The Occupational Safety and Health Administration (OSHA) Safety and Health Standards (29 CFR Part 1926, Revised October 1989), require that excavations be constructed in accordance with the current OSHA guidelines. Furthermore, the State of Texas requires that detailed plans and specifications

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meeting OSHA standards be prepared for trench and excavation retention systems used during construction. The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavation as part of the contractor's safety procedures. In no case should slope height, slope inclination or excavation depth exceed those specified in local, state and Federal safety regulations. OSHA addresses the construction of slopes in large excavations that are less than 20 feet deep on OSHA Table B-1.

Based on the results of our field and laboratory testing, it is our opinion that the stratum I and II materials encountered at this site should be considered Type B soils. If these materials become wet or submerged, they should be downgraded to Type C materials.

We have provided this information solely as a service to our client. The OSHA regulations and OSHA Table B-I should be consulted prior to any excavations that would be subject to OSHA regulations. FGS does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state and Federal safety or other regulations.

#### QUALITY CONTROL

#### Document Review:

Due to the uniqueness of each project and construction site, it is important that all engineering reports, drawings, specifications, change orders and other related documents accurately reflect the recommendations intended by the respective design professionals involved in the project. The performance of this project will depend on the correct interpretation and implementation of our geotechnical engineering report and guidelines. We should be provided the opportunity to review the final design and construction documents to check that our geotechnical recommendations are properly interpreted and implemented in these documents. This review is not a part of our scope of services for this project and would be an additional service. We cannot be responsible for misinterpretation of our geotechnical recommendations if we have not had an opportunity to review these documents.

#### Construction Materials Testing:

As the Geotechnical Engineer of Record, we recommend that Frost GeoSciences be retained to monitor the earthwork related activities for this project. Due to our familiarity with this project, it is important that FGS provide these services to make certain that our geotechnical recommendations are interpreted properly and to make certain that actual field conditions are those described in our geotechnical report. We believe this technical overview and on-site surveillance during these activities is essential to provide a well-constructed facility and to check that the intent of these geotechnical recommendations is met.

#### REPORT LIMITATIONS

The recommendations and guidelines submitted in this report are based on the available subsurface information developed by FGS and project information provided by the client. If there are any changes in the nature, design or location of the project, the opinions, conclusions, recommendations and guidelines submitted in this report should not be used until we are able to review the changes and respond in writing as to whether the information contained within this report remains applicable.

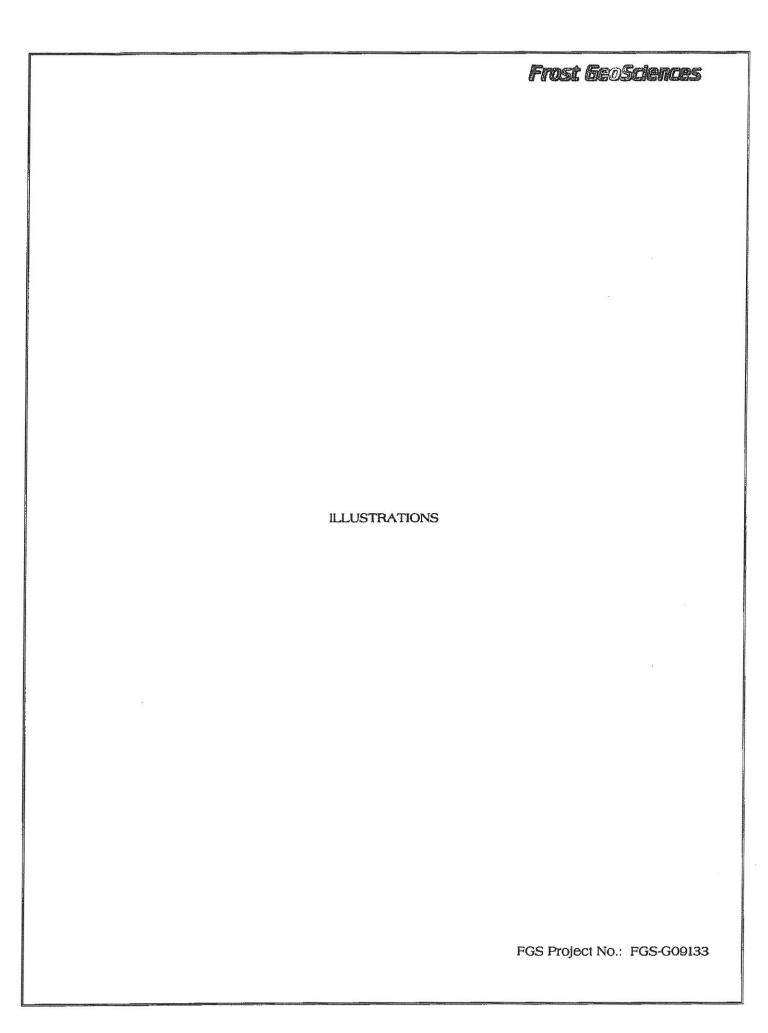
FGS Project No: FGS-G09133

Substantial variations at this site have been observed and interpreted at the boring location only. Substantial variations in subsurface materials resulting from local geologic conditions or previous site use may occur away from the boring location. These variations may not become evident until construction begins. Therefore, any conditions that vary significantly from those described in our report should be reported to FGS immediately. FGS will then determine whether our conclusions, opinions and recommendations remain valid or whether additional investigation and/or engineering analysis is required.

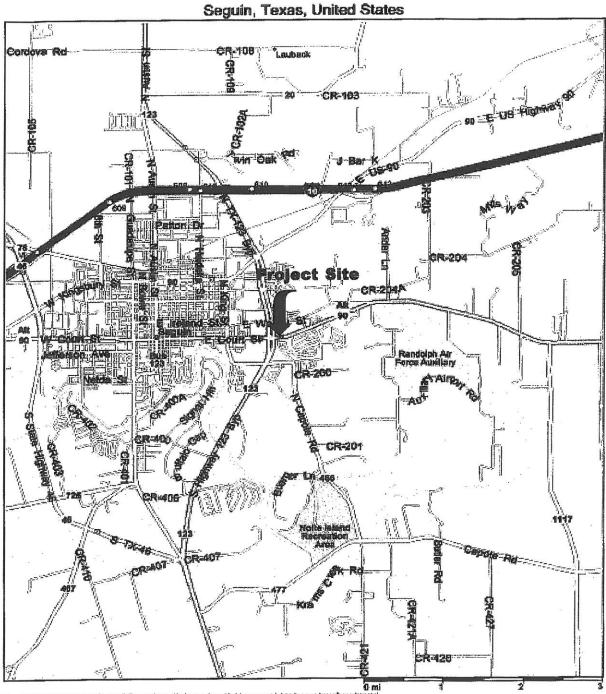
This study has been performed in accordance with accepted geotechnical engineering practice using the standard of care and skill currently exercised by geotechnical engineers practicing in this area. No warranty, expressed or implied, is made or intended.

This report has been prepared exclusively for the specified client, project and client's authorized project team for use in preparing the appropriate design and construction documents for this project. This report may be included in the construction documents for this project provided the report is reproduced in its entirety. This report shall not be reproduced or used for any other purpose without the express written consent of Frost GeoSciences, Inc.

FGS Project No: FGS-G09133



## Frost Geusciences



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## PROJECT NAME:

Water Main Project in Seguin E Court St Seguin, Texas

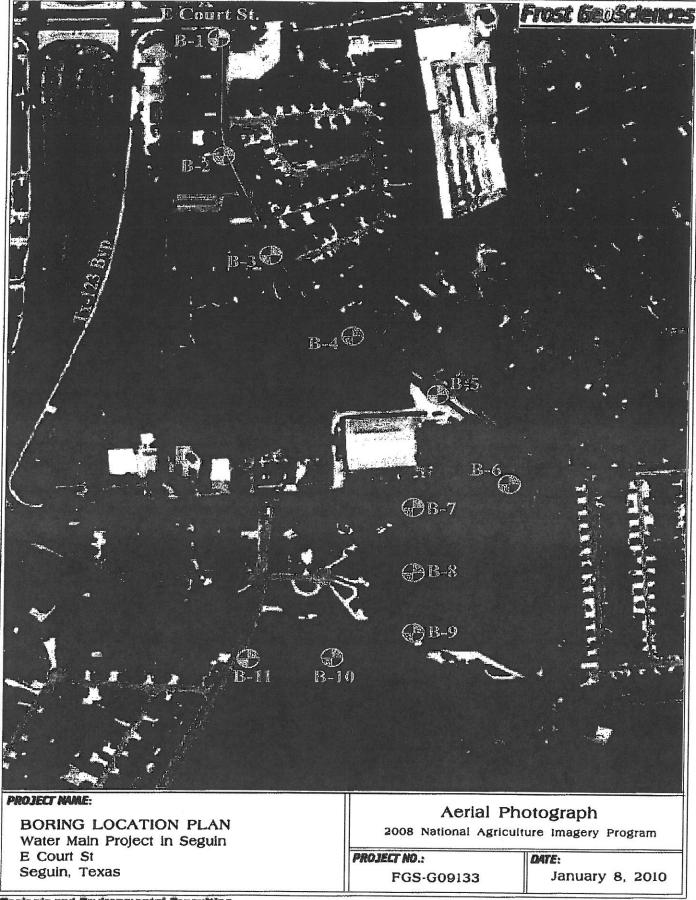
## Vicinity Map

PROJECT NO.:

DATE:

FGS-G09133

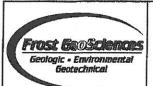
January 8, 2010



APPENDIX A

Logs of Borings Symbol Key Sheet

FGS Project No.: FGS-G09133



PROJECT: Water Main Project

Seguin

Seguin, Texas

PROJECT NO .:

SURFACE ELEVATION:

FGS-G09133

**BORING NO.: DRILLING DATE:** 

B-1 12/21/2009

CLIENT:

Klotz Associates, Inc.

	CLIENT: Klotz Associates, Inc.  FIELD DATA  LABORATORY DATA											PAGE 1 of 1	
	FIELD DATA LABORATORY DATA											DRILLING METHOD(S):	
SOIL SYMBOL	ОЕРТН (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RGD: %	MOISTURE CONTENT (%)		PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Dry auger drilling techniques were used to the termination depth of the boring.  SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drilling operations and subsurface water observations.
0	_	/ග	ZYHXX	_		PL	PI	DE	عرون	Ð	26		DESCRIPTION OF STRATUM
	-	- 1		25	71	19	52					69	STRATUM I Dark brown FAT CLAY (CH).
	- 5 -			30	88	20	68						
				20	68	19	49					80	Gradded to brown to reddish brown FAT CLAY (CH) below 8.0 feet depth.
	- 10 - -			20									
-	15												Boring terminated at 12.0 feet depth
P T R R	N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION Is tog is not valid if separated from the report.											REMARKS: The borehole was backfilled with soil cuttings upon completion of drilling operations and subsurface water observations.	

FROST LOG G09133,GPJ FROST.GDT 1/5/10



PROJECT: Water Main Project

Seguin

Seguin, Texas

PROJECT NO .:

FGS-G09133

B-2

**BORING NO.: DRILLING DATE:** 

12/21/2009

SURFACE ELEVATION:

Klotz Associates Inc.

	_	-			CL	.IEN	IT:	Klot	z Asso	ciate	s, Inc		PAGE 1 of 1		
FIELD DATA LABORATORY DATA D												DRILLING METHOD(S):  Dry auger drilling techniques were used to the termination depth of the boring.			
1					ATI	ERB JMIT	ERG S					3	Dry auger unning techniques were used to the termination depth or the buring.		
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drillin operations and subsurface water observations.		
S	H	NAS/	821.55 81.88.50		LL	PL	PI	8 <u>5</u>	325	FAI	25	¥	DESCRIPTION OF STRATUM		
				29									STRATUM I Dark brown FAT CLAY (CH).		
		-		19	82	20	62								
	- 5 -			20											
				12	53	16	37					60	Gradded to brown to reddish brown FAT CLAY (CH) below 6.0 feet depth.		
	. 10 –			13											
				11	31	12	19								
-	-												Boring terminated at 12.0 feet depth		
P T R	N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION												REMARKS: The borehole was backfilled with soil cuttings upon completion of drilling operatio and subsurface water observations.		



PROJECT: Water Main Project

Seguin

Seguin, Texas

PROJECT NO.: BORING NO.:

FGS-G09133 B-3

DRILLING DATE:

12/21/2009

**SURFACE ELEVATION:** 

CLIENT: Klotz Associates, Inc.

PAGE 1 of 1

									<u>.                                    </u>		PAGE 1011
FIELD DATA LABORATORY DATA ATTERBERG											DRILLING METHOD(S):  Dry auger drilling techniques were used to the termination depth of the boring.
DEPTH (FT)	SAMPLES N: BLOWSFT P: TONS/SQ FT R: R. W RQD: %	MOISTURE CONTENT (%)	HOUID LIMIT	PLASTIC LIMIT STA	PLASTICITY INDEX	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drillin operations and subsurface water observations.
当一	A S S S S S S S S S S S S S S S S S S S	8	LL	PL	Pl	R.S.	SEE	Ā	85	M	DESCRIPTION OF STRATUM
		35	79	20	59						STRATUM I Dark brown FAT CLAY (CH).
5 -		33	85	20	65					83	e e e e e e e e e e e e e e e e e e e
		22									Gradded to brown to reddish brown FAT CLAY (CH) below 6.0 feet depth.
10 -		22	64	20	44						
		18									Boring terminated at 12.0 feet depth
P - POCK T - TXDC	NDARD PENE KET PENETR OT CONE PEN K CORE REC	OME VETR OVE	TER F ATIOI RY	RESIS N RES	STANG	CE	Œ				REMARKS:  The borehole was backfilled with soil cuttings upon completion of drilling operation and subsurface water observations.



PROJECT: Water Main Project

Seguin

Seguin, Texas

PROJECT NO.: FGS-G09133 **BORING NO.:** 

B-4

**DRILLING DATE: SURFACE ELEVATION:**  12/21/2009

Klotz Associates, Inc. CLIENT:

PAGE 1 of 1

	FIE	ELD	DATA		<u>L</u>	L	ABO	RATO	RY DA	ATA			DRILLING METHOD(S):
1				(%)	ATT L	ERBE	S				ñ.	(%)	Dry auger drilling techniques were used to the termination depth of the boring.  SUBSURFACE WATER INFORMATION:
SOIL STMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	F LIQUID LIMIT	PLASTIC LIMIT	D PLASTICITY INDEX	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Subsurface water was not encountered either during or upon completion of drilling operations and subsurface water observations.  DESCRIPTION OF STRATUM
Ž	٥	(8)	ZTHER	27	71	19	52		0000	11.	00	-	STRATUM I Dark brown FAT CLAY (CH).
				26									Dalk Blown FAT GLAT (GIT).
	- 5 -			26	84	22	62					84	
				17									Gradded to brown to reddish brown FAT CLAY (CH) below 6.0 feet depth.
	- 10 -	-		20	70	19	51						
		-		18									
12		+											Boring terminated at 12.0 feet depth
	- 15 ·												
F 7	N - ST/ P - PO F - TXI R - RO	CKE DOT ICK	ARD PENE T PENETRI CONE PEN CORE REC CK QUALIT	OME IETR OVE	TER F ATIO RY	RESIS N RE	STAN	CE	CE				REMARKS: The borehole was backfilled with soll cuttings upon completion of drilling operation and subsurface water observations.



**PROJECT:** Water Main Project

Seguin

Seguin, Texas

PROJECT NO.: BORING NO.:

FGS-G09133 B-5

B-5

DRILLING DATE: SURFACE ELEVATION: 12/21/2009

Klotz Associates, Inc. CLIENT: PAGE 1 of 1 DRILLING METHOD(S): LABORATORY DATA **FIELD DATA** Dry auger drilling techniques were used to the termination depth of the boring. ATTERBERG LIMITS MINUS NO. 200 SIEVE (%) MOISTURE CONTENT (%) CONFINING PRESSURE (POUNDS/SQ IN) SUBSURFACE WATER INFORMATION: PLASTICITY INDEX FAILURE STRAIN (%) Subsurface water was not encountered either during or upon completion of drilling operations and subsurface water observations. PLASTIC LIMIT COMPRESSIVE STRENGTH (TONS/SQ FT) LIQUID LIMIT DRY DENSITY POUNDS/CU.FT SOIL SYMBOL N: BLOWS/FT P: TONS/SQ F T: BLOWS R: % RQD: % DEPTH (FT) SAMPLES LL PI PL DESCRIPTION OF STRATUM STRATUMI Dark brown FAT CLAY (CH). 65 28 87 22 27 Gradded to brown to reddish brown FAT CLAY (CH) below 6.0 56 12 56 16 40 feet depth. 14 84 38 15 54 16 Boring terminated at 12.0 feet depth G09133.GPJ FROST.GDT 1/5/10 N - STANDARD PENETRATION TEST RESISTANCE **REMARKS:** P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE 507 The borehole was backfilled with soil cuttings upon completion of drilling operations and subsurface water observations. R - ROCK CORE RECOVERY

RQD - ROCK QUALITY DESIGNATION

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**PROJECT:** Water Main Project

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Seguin, Texas

**PROJECT NO.: BORING NO.:**  FGS-G09133

**B-6** 

**DRILLING DATE:** SURFACE ELEVATION:

12/21/2009

CLIENT: Klotz Associates, Inc. PAGE 1 of 1 DRILLING METHOD(S): LABORATORY DATA FIELD DATA Dry auger drilling techniques were used to the termination depth of the boring. **ATTERBERG** LIMITS MINUS NO. 200 SIEVE (%) CONFINING PRESSURE (POUNDS/SQ IN) SUBSURFACE WATER INFORMATION: PLASTICITY INDEX MOISTURE CONTENT FAILURE STRAIN (%) Subsurface water was not encountered either during or upon completion of drilling PLASTIC LIMIT operations and subsurface water observations. COMPRESSIVE STRENGTH (TONS/SQ FT) LIQUID LIMIT DRY DENSITY POUNDS/CU.FT N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % R: % SOIL SYMBOL DEPTH (FT) SAMPLES LL PL PI **DESCRIPTION OF STRATUM** STRATUM I 26 58 16 Dark brown FAT CLAY (CH). 28 87 21 66 28 Gradded to brown to reddish brown FAT CLAY (CH) below 6.0 25 feet depth. 51 15 33 11 48 13 Boring terminated at 12.0 feet depth N - STANDARD PENETRATION TEST RESISTANCE REMARKS:

R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION

P - POCKET PENETROMETER RESISTANCE

T - TXDOT CONE PENETRATION RESISTANCE

G09133.GPJ FROST.GDT 1/5/10

FROSTLOG

The borehole was backfilled with soil cuttings upon completion of drilling operations

and subsurface water observations.



PROJECT: Water Main Project

Seguin

Seguin, Texas

PROJECT NO.: BORING NO.:

DRILLING DATE:

FGS-G09133

B-7

12/21/2009

SURFACE ELEVATION:

CLIENT: Klotz Associates, Inc.

PAGE 1 of 1

	CLIENT: KIOTZ ASSOCIATES, Inc.	PAGE 1 of 1
FIELD DATA	LABORATORY DATA	DRILLING METHOD(S):  Dry auger drilling techniques were used to the termination depth of the boring.
SOIL SYMBOL  DEPTH (FT)  SAMPLES  N: BLOWS/FT  P: TONS/SQ FT  T: BLOWS  R: %  ROD: %  MOISTURE CONTENT (%)	F LIQUID LIMIT  THE PLASTIC LIMIT  THE STRAIN (%)  FAILURE STRAIN (%)  CONFINING PRESSURE  POUNDS/SQ IN)  MINUS NO. 200 SIEVE (%)	SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drilling operations and subsurface water observations.  DESCRIPTION OF STRATUM
31		STRATUMI
28 28 25 3 4 10	76 20 56 49 17 32 78	Gradded to brown to reddish brown FAT CLAY (CH) below 6.0 feet depth.  Boring terminated at 12.0 feet depth
15 N - STANDARD PENETRA		Boring terminated at 12.0 feet depth
P - POCKET PENETROME T - TXDOT CONE PENETE R - ROCK CORE RECOVE	ETER RESISTANCE RATION RESISTANCE ERY	REMARKS:  The borehole was backfilled with soil cuttings upon completion of drilling operations and subsurface water observations.
RQD - ROCK QUALITY DE This log is not valid if separated from the report.	SIGNATION	7

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Geotechnical

PROJECT: Water Main Project

Seguin

Seguin, Texas

PROJECT NO.: BORING NO.:

**DRILLING DATE:** 

FGS-G09133

B-8

12/21/2009

SURFACE ELEVATION:

CLIENT: Klotz Associates, Inc.  FIELD DATA  LABORATORY DATA  ATTERBERG LIMITS  LIMITS  LIMITS  LIMITS  LIMITS  LIMITS											s, Inc		PAGE 1 of 1			
													DRILLING METHOD(S):  Dry auger drilling techniques were used to the termination depth of the boring.			
$\top$				T	1								Tory auger driving techniques were used to the termination depth of the boring.			
SOIL SYMBOL	<b>DEPTH (FT)</b>	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS P: 42	RQD: % MOISTURE CONTENT (%)	LIQUID LIMIT	T	PLASTICITY INDEX	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drillir operations and subsurface water observations.			
8	B	S	Zářá	§ 8	LL		PI	<b>80</b>	825	FAI	85	¥	DESCRIPTION OF STRATUM			
				22									STRATUM I Dark brown FAT CLAY (CH).			
				20	69	18	51					72				
				20	44	16	28					75	Gradded to brown to reddish brown FAT CLAY with Gravel (CH) below 3.0 feet depth.			
	5 -															
	•			17									Auger refusal, Chert.			
_													Boring terminated at 7.0 feet depth			
-	10 -															
	ž. <b>-</b>															
ŀ	15 -															
N- P- T- R-	- STAI - POC - TXD - ROC	KET OT (	ARD PEN PENET CONE PI CORE RE K QUALI	ROME ENETR COVE	TER I ATIO RY	RESIS N RES	TANC	E	E				REMARKS:  The borehole was backfilled with soil cuttings upon completion of drilling operation and subsurface water observations.			

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**PROJECT:** Water Main Project

Seguin

Seguin, Texas

PROJECT NO.: FGS-G09133

BORING NO.: DRILLING DATE:

B-9 12/21/2009

**SURFACE ELEVATION:** 

Meta Associatos Inc

	CLIENT:	Klotz Associates, Inc.	PAGE 1 of 1			
FIELD DATA	LABC	PRATORY DATA	DRILLING METHOD(S):  Dry auger drilling techniques were used to the termination depth of the boring.			
SAMPLES SAMPLES SIGNASSOR T. BLOWS/FT T. BLOWS R. % ROD: % MOISTURE CONTENT (%)	FIGUID LIMIT PLASTIC LIMIT SIBBLE SIBOR BERGER INDEX BERGER INDEX	DRY DENSITY POUNDS/CU.FT COMPRESSIVE STRENGTH (TONS/SQ FT) FAILURE STRAIN (%) CONFINING PRESSURE (POUNDS/SQ IN) MINUS NO. 200 SIEVE (%)	SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drillin operations and subsurface water observations.  DESCRIPTION OF STRATUM			
14	60 19 41		STRATUM I Dark brown FAT CLAY (CH).			
9			STRATUM II Tan Sandy Gravel,			
6	NP NP NP	18	Graded to tan Gravelly SAND below 5.0 feet depth.			
8	NP NP NP	29				
9						
			Boring terminated at 12.0 feet depth			
N - STANDARD PENETRA' P - POCKET PENETROME T - TXDOT CONE PENETR R - ROCK CORE RECOVE RQD - ROCK QUALITY DE	TER RESISTAN ATION RESIST RY	ICE	REMARKS: The borehole was backfilled with soil cuttings upon completion of drilling operation and subsurface water observations.			

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Geotechnical

PROJECT: Water Main Project

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Seguin, Texas

PROJECT NO.:

FGS-G09133

BORING NO.: DRILLING DATE: B-10 12/21/2009

SURFACE ELEVATION:

	CLIENT: Klotz Associates, Inc.	PAGE 1 of 1		
FIELD DATA	LABORATORY DATA	DRILLING METHOD(S):  Dry auger drilling techniques were used to the termination depth of the boring.		
SOIL STMBOL.  DEPTH (FT)  SAMPLES  N: BLOWS/FT P: TONS/SO FT T: BLOWS R: % RQD: %  MOISTURE CONTENT (%)	T LIQUID LIMIT STATE  TO PLASTIC LIMIT STATE  TO PLASTICITY INDEX  TO PL	SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drilling operations and subsurface water observations.  DESCRIPTION OF STRATUM		
23	42 17 25 62	STRATUM I Dark brown FAT CLAY (CH).		
7		STRATUM II Brown Sandy Gravel.		
5 - 5 -	25 14 11 15			
3		Auger refusal, Chert.		
- 10 -		Boring terminated at 7,0 feet depth		
N - STANDARD PENETRAT P - POCKET PENETROME T - TXDOT CONE PENETR R - ROCK CORE RECOVEI RQD - ROCK QUALITY DES	TER RESISTANCE ATION RESISTANCE RY	REMARKS: The borehole was backfilled with soil cuttings upon completion of drilling operation and subsurface water observations.		

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PROJECT: Water Main Project

Seguin

Seguin, Texas

PROJECT NO .:

SURFACE ELEVATION:

FGS-G09133 B-11

**BORING NO.: DRILLING DATE:** 

12/21/2009

	•	_			CI	LIEN	IT:	Klot	z Asso	ciate	s, Inc	i.	PAGE 1 of 1
	FIELD DATA LABORATORY DATA												DRILLING METHOD(S):
		Γ			AT	TERB LIMIT	ERG S					_	Dry auger drilling techniques were used to the termination depth of the boring.
SOIL SYMBOL	БЕРТН (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	SUBSURFACE WATER INFORMATION: Subsurface water was not encountered either during or upon completion of drilling operations and subsurface water observations.
SO	DEF	SA	20 H 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	§ Q	LL	PL	PI	F.S.	386	FA	88	Z	DESCRIPTION OF STRATUM
	-			16	22	11	11					54	STRATUM I Reddish brown LEAN CLAY (CL).
	-			21									STRATUM II Tan Clayey Gravel (GC).
11.11.11		1	8	8	52	18	34					20	. 3
	- 5 -		2	5									
1011011													i.
SIN				3				To the state of th					Graded to tan Clayey GRAVEL with Sand below 8.0 feet depth.
	- 10 <b>-</b>			4	29	14	15					16	
													Boring terminated at 12.0 feet depth
-	-												Some Some at 12,0 lost doput
P T R													REMARKS:  The borehole was backfilled with soil cuttings upon completion of drilling operations and subsurface water observations.

## Symbol Key Sheet

## Material Symbols





Clay (CH)



Sandy Clay (CL)



Silty Clay (CL)



Gravelly Clay (CL)



Asphali



Clayey Sand (SC)



Sand (SP)



Silty Sand (SM)



Gravelly Sand (SP)



Base



Clayey Silt (ML)



Sandy Silt (ML)



Sill (ML)



Gravelly Silt (ML)



Concrete



Clayey Gravel (GC)



Sandy Gravel (GP)



Silly Gravel (GM)



Gravel (GP or GW)

3



Conglomerate



Limestone



Mari



Sandstone



Shale

Strength	of	Cohesive	Soils
----------	----	----------	-------

Consistency	Undrained Shear Strength, KSF	
Very Soft	less than 0.25	
Soft	0.25 to 0.50	
Firm	0.50 to 1.00	
Stiff	1,00 to 2.00	
Very Stiff	2.00 to 4.00	
Hard	greater than 4.00	

## Soil Plasticity

Degree of Plasticity	Plasticity Index (PI)
None	0 to 5
Low	5 to 10
Moderate	10 to 20
Plastic	20 to 40
Highly Plastic	more than 40

## Density of Granular Soils

Descriptive Term	SPT Blow Count (blows/ft)	
Very Loose	less than 4	
Loose	4 to 10	
Medium Dense	10 to 30	
Donse	30 to 60	
Very Dense	more than 50	

## Standard Penetration Test (ASTM D 1586) Driving Record

Blows	Dor	Ennt
DIOMA	L CI	LUUR

25 75/8"

Sampler was sealed 6 inches, then 25 blows were required to advance the sampler 12 inches. Sampler was seated 6 inches, 25 blows were required for the second 6 inch increment and the 50 blow limit was reached at 2 Inches of the last increment.

Ref/2"

Sampler could only be driven 2 inches of the 6 inch seating penetration before the 50 blow limit was reached.

## Terms Characterizing Structure

#### Soil Terms

Blocky Calcareous Fissured

Contains cracks or failure planes resulting in rough cubes of material.

Contains appreciable quantities of calcium carbonate.

Contains shrinkage cracks, which are frequently filled with fine sand or silt. The fissures are usually near vertical in orientation.

Interbedded Laminated

**Nodules** 

**Partings** 

Composed of alternating layers of different soil types. Composed of thin layers of varying color and texture.

Secondary inclusions that appear as small lumps about 0.1 to 0.3 inch in diameter. Inclusion of different material less than 1/8 Inch thick extending through the sample.

Inclusion of different material that is smaller than the diameter of the sample. **Pockets** Inclusion of different material between 1/8 and 3 inches thick, and extends through the sample. Seams

Has inclined planes of weakness that are slick and glossy in appearance. Slickensides are commonly thought to be randomly oriented.

Streaks or Stains

Stains of limited extent that appear as short stripes, spots or blotches.

#### Rock Terms

Weathering

Slickensided

**Bedding Plane** Fracture Joint % Recovery ROD - Rock Quality Designation

A surface parallel to the surface of deposition, generally marked by changes in color or grain size.

A natural break in rock along which no displacement has occurred.

A natural break along which no displacement has occurred, and which generally intersects primary surfaces.

The ratio of total length of recovery to the total length of core run, expressed as a percentage.

The ratio of total recovered length of fragments longer than 4 inches to the total run length, expressed

The process by which rock is broken down and decomposed.

## Sampler Symbols







Disturbed Sample







